CDC-X237/X437

SERVICE MANUAL

Ver 1.0 2003. 01

US Model
Canadian Model
CDC-X237/X437
AEP Model
UK Model
CDC-X237

• The tuner and CD sections have no adjustments.

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-930A-185
Optical Pick-up Name	OPTIMA-752B2

SPECIFICATIONS

RADIO SECTION (US, Canadian model)
(FM)
Frequency Range: 87.5 MHz – 108 MHz
Usable Sensitivity: 12.7 dBf
50 dB Quieting Sensitivity: 17.2 dBf
IF Rejection: 100 dB
Frequency Response: 30 Hz – 15,000 Hz
S/N Ratio: 70 dB
Stereo Separation: 35 dB at 1 kHz
Alternate Channel Selectivity: 90 dB
Capture Ratio: 3 dB

(AM)
Frequency Range: 530 kHz – 1,710 kHz
Usable Sensitivity: 30 µV (30 dB)

RADIO SECTION (AEP, UK model)
(FM)
Frequency Range: 87.5 MHz – 108 MHz
Intermediate frequency: 10.7 MHz
Usable Sensitivity: 12.7 dBf
50 dB Quieting Sensitivity: 17.2 dBf
IF Rejection: 100 dB
Frequency Response: 30 Hz – 15,000 Hz
S/N Ratio: 67 dB
Stereo Separation: 35 dB at 1 kHz
Alternate Channel Selectivity: 90 dB
Capture Ratio: 3 dB

(MW)
Frequency Range: 531 kHz – 1,602 kHz
Intermediate frequency: 10.71 MHz/450 kHz
Usable Sensitivity: 30 µV (30 dB)

(LW)
Frequency Range: 144 kHz – 288 kHz (1-kHz/9-kHz steps)
Intermediate frequency: 10.71 MHz/450 kHz
Usable Sensitivity: 30 µV (30 dB)

CD SECTION
Frequency Response: 17 Hz – 20 kHz +0/–3 dB
Dynamic Range: More than 85 dB
Channel Separation: More than 60 dB
S/N Ratio: More than 90 dB
Wow/Flutter: Unmeasurable

AUDIO SECTION
Max. Power Output: 45 W × 4 channels

AUX Input
Input sensitivity (load impedance) AUX: 300 mV (10 kΩ)

– Continued on next page –

FM/AM COMPACT DISC PLAYER
CDC-X237/X437
FM/MW/LW COMPACT DISC PLAYER
CDC-X237

9-877-001-01
2003A0400-1
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Sony Corporation
e Vehicle Company
Published by Sony Engineering Corporation

GENERAL

Power-Supply Voltage: 14.4 V (11 to 16 V allowable),
DC, negative ground
Load Impedance: 4 Ω
Tone Control: Bass ±10 dB at 100 Hz,
Treble ±10 dB at 10 kHz
Preamp Output Voltage (load impedance): 2.2 V (10 kΩ)
Installed size: 182 (W) × 53 (H) × 155 (D) mm
(7 1/4 (W) × 2 1/8 (H) × 6 1/8 (D) inches)
Supplied Accessory: Carrying case (1)

CARD REMOTE CONTROL (CDC-X437)

Dimensions: approx. 33 (W) × 85 (H) × 7.5 (D) mm
(1 5/16 (W) × 3 3/8 (H) × 5/16 (D) inches)
Weight: approx. 20 g (0.7 oz.) (including battery)

• *Specifications and external appearance are subject to change without notice due to product improvement.*

SERVICE NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

• US, Canadian model

CAUTION

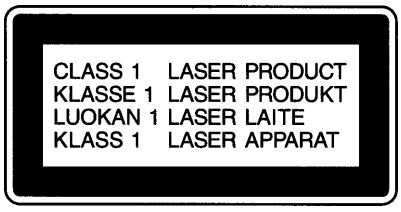
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

• AEP, UK model

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This compact disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the exterior.



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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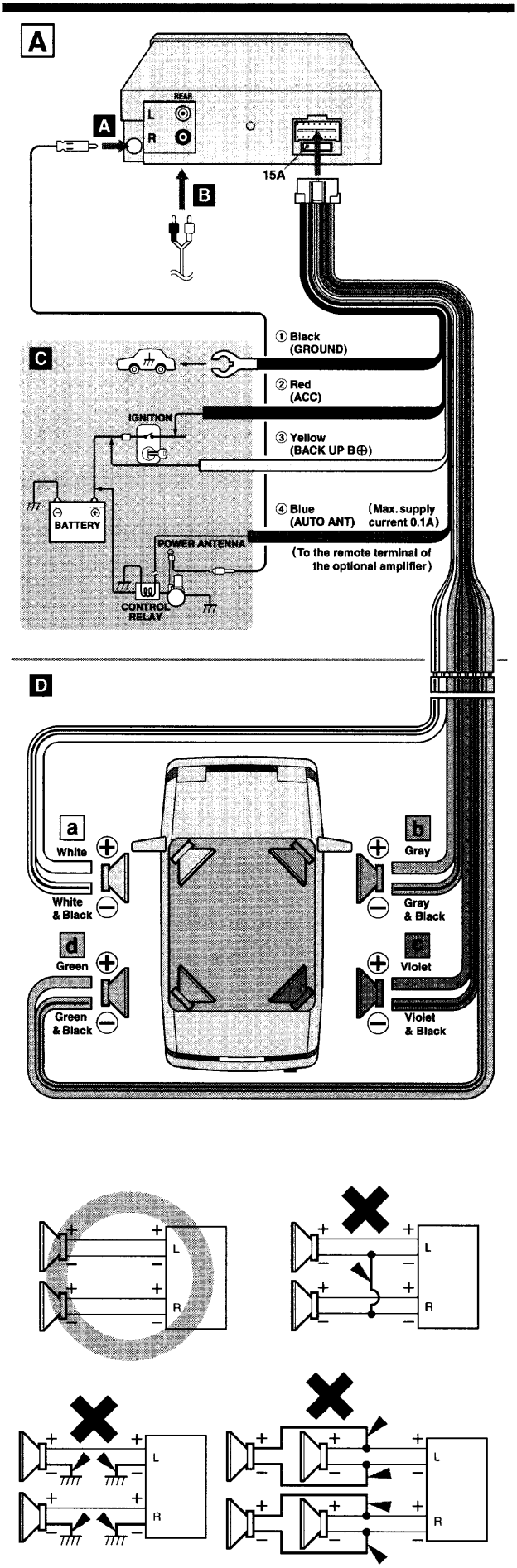
SECTION 1
GENERAL

This section is extracted from instruction manual.



ENGLISH

CONNECTIONS

PRECAUTIONS

Precaution on making connections

Before connecting, make sure that the ignition switch is set to OFF, and remove the ground terminal of the battery to protect the unit and your car from damage.

Caution

Make the connections correctly, as illustrated in the connection diagram.
Do not connect the negative ⊖ cord of each speaker wire to a common point. When replacing the fuse, be sure to use a fuse of the same rated amperage. Use of a fuse of a higher rating may cause serious damage to the unit.

CONNECTION DIAGRAM → A

A From the car antenna
B To the input jack of the optional power amplifier (for the rear channel)
C To the wiring of the vehicle

Colors of leads

① **Black** (ground lead to be connected to vehicle [metal] body.)
② **Red** (ACC lead to be connected to the terminal from which power is supplied when the ignition switch is set to ACC.)
③ **Yellow** (battery lead to be connected to the backup terminal from which power is always supplied.)
④ **Blue** (power antenna lead to be connected to the terminal of the control relay switch for a vehicle equipped with a fully automatic power antenna. This lead is not used for a vehicle with a manual antenna or a switch-operated power antenna. If you will use the optional power amplifier with the unit, connect this lead to the remote terminal of the amplifier.)
(Max. supply current 0.1 A)

D Speaker connections

Colors of leads

a **White/White & Black**; Front left ⊕/⊖
b **Gray/Gray & Black**; Front right ⊕/⊖
c **Violet/Violet & Black**; Rear right ⊕/⊖
d **Green/Green & Black**; Rear left ⊕/⊖

4-SPEAKER CONNECTIONS → a b c d
2-SPEAKER CONNECTIONS → a b / c d

Note

Insulate the end of the unused lead with a piece of tape.

Notes

- Use speakers with an impedance of 4 to 8 ohms and with adequate power-handling capacities. Otherwise, the speakers may be damaged.
- Do NOT connect the speakers in parallel.
- Do NOT connect the terminals of the speaker system to the car chassis.

ESPAÑOL

CONEXIONES

PRECAUCIONES

Precauciones al hacer las conexiones

Antes de conectar, confirme que el interruptor de encendido está en OFF y desmonte el terminal a tierra de la batería para proteger el aparato y su coche contra daños.

Precaución

Haga las conexiones correctamente, tal como se describe en el diagrama de conexiones.
No conecte el cable negativo ⊖ de cada cable de altavoz a un punto común. Cuando cambie el fusible, utilice siempre uno del mismo amperaje nominal. El uso de un fusible de mayor régimen puede provocar daños importantes en el aparato.

DIAGRAMA DE CONEXIONES → A

A De la antena del coche
B A la toma de entrada del amplificador de potencia opcional (para el canal trasero)
C Al cableado del vehículo

Colores de los cables

① **Negro** (cable a tierra a conectar a la carrocería del vehículo [metal].)
② **Rojo** (cable ACC a conectar al terminal que recibe eléctrica cuando el interruptor de encendido está en ACC.)
③ **Amarillo** (cable de batería a conectar al terminal de reserva con un flujo permanente de electricidad.)
④ **Azul** (cable de antena motriz a conectar al terminal del interruptor del relé de control para un vehículo equipado con antena motriz totalmente automática. Este cable no se debe utilizar en un vehículo con antena manual o antena motriz que funcione mediante interruptor. Si utiliza el amplificador de potencia opcional en esta unidad, conecte este cable al terminal remoto del amplificador.)
(Corriente máxima 0,1 A)

D Conexiones de altavoces

Colores de los cables

a **Blanco/Blanco y negro**; parte frontal izquierda ⊕/⊖
b **Gris/Gris y negro**; parte frontal derecha ⊕/⊖
c **Violeta/Violeta y negro**; parte posterior derecha ⊕/⊖
d **Verde/Verde y negro**; parte posterior izquierda ⊕/⊖

CONEXIONES PARA 4 ALTAVOCES → a b c d
CONEXIONES PARA 2 ALTAVOCES → a b / c d

Nota

Aísle la punta del conductor sin usar con cinta.

Notas

- Utilice altavoces con una impedancia de 4 a 8 ohmios y con suficiente capacidad eléctrica. De lo contrario puede dañar los altavoces.
- NO conecte los altavoces en paralelo.
- NO conecte los terminales del sistema de altavoces al chasis del coche.

FRANÇAIS

CONNEXIONS

PRECAUTIONS

Précautions pour les connexions

Avant le raccordement, vérifiez que la clé d'allumage est sur OFF, et débranchez le prise de masse de la batterie pour protéger l'appareil et votre voiture des dommages.

Attention

Effectuez les connexions correctement, comme indiqué sur le diagramme de connexion.
Ne raccordez pas le cordon négatif ⊖ de chaque fil de haut-parleur à un point commun. Au remplacement du fusible, utilisez un fusible à ampérage nominal identique. L'emploi d'un fusible à ampérage plus élevé peut sérieusement endommager l'appareil.

DIAGRAMME DE CONNEXION → A

A De l'antenne du véhicule
B A la prise d'entrée de l'amplificateur de puissance en option (pour le canal arrière)
C Vers le câblage du véhicule

Couleurs des fils

① **Noir** (fil de mise à la terre à raccorder à la carrosserie [métal] du véhicule.)
② **Rouge** (fil ACC à raccorder à la prise à partir de laquelle la puissance est fournie quand la clé d'allumage est réglée sur ACC.)
③ **Jaune** (fil de batterie à raccorder à la prise de secours de laquelle l'alimentation se fait toujours.)
④ **Bleu** (fil d'antenne électrique à raccorder à la prise du commutateur de relais de commande pour un véhicule équipé d'une antenne électrique entièrement automatique. Ce fil n'est pas utilisé sur les véhicules à antenne manuelle ou antenne électrique opérée par commutateur. Si vous souhaitez utiliser l'amplificateur de puissance en option avec cet appareil, raccordez ce fil à la prise de télécommande de l'amplificateur.)
(Courant d'alimentation maxi. 0,1 A)

D Raccordement des enceintes

Couleurs des fils

a **Blanc/Blanc et Noir**; Avant gauche ⊕/⊖
b **Gris/Gris et Noir**; Avant droite ⊕/⊖
c **Violet/Violet et Noir**; Arrière droite ⊕/⊖
d **Vert/Vert et Noir**; Arrière gauche ⊕/⊖

RACCORDEMENT A 4 ENCEINTES → a b c d
RACCORDEMENT A 2 ENCEINTES → a b / c d

Remarque

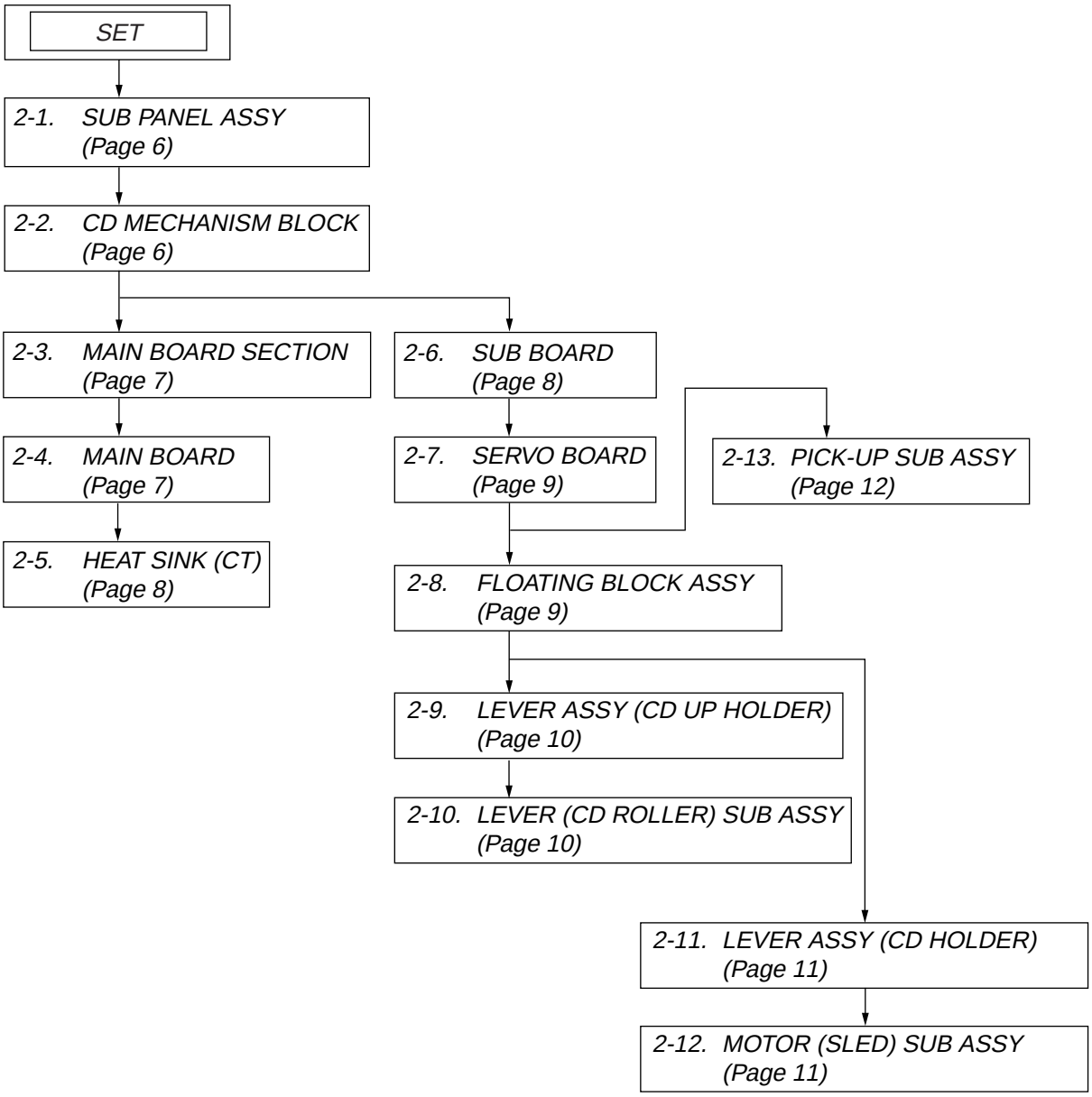
Isoler l'extrémité du fil inutilisé avec du ruban.

Remarques

- Utilisez des enceintes à impédance de 4 à 8 ohms et puissance nominale adéquate. Sinon elles seront endommagées.
- Ne raccordez PAS les enceintes en parallèle.
- Ne raccordez PAS les prises du système d'enceintes au châssis de la voiture.

SECTION 2
DISASSEMBLY

Note : This set can be disassemble according to the following sequence.


SET
2-1. SUB PANEL ASSY (Page 6)
2-2. CD MECHANISM BLOCK (Page 6)
2-3. MAIN BOARD SECTION (Page 7)
2-4. MAIN BOARD (Page 7)
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2-8. FLOATING BLOCK ASSY (Page 9)
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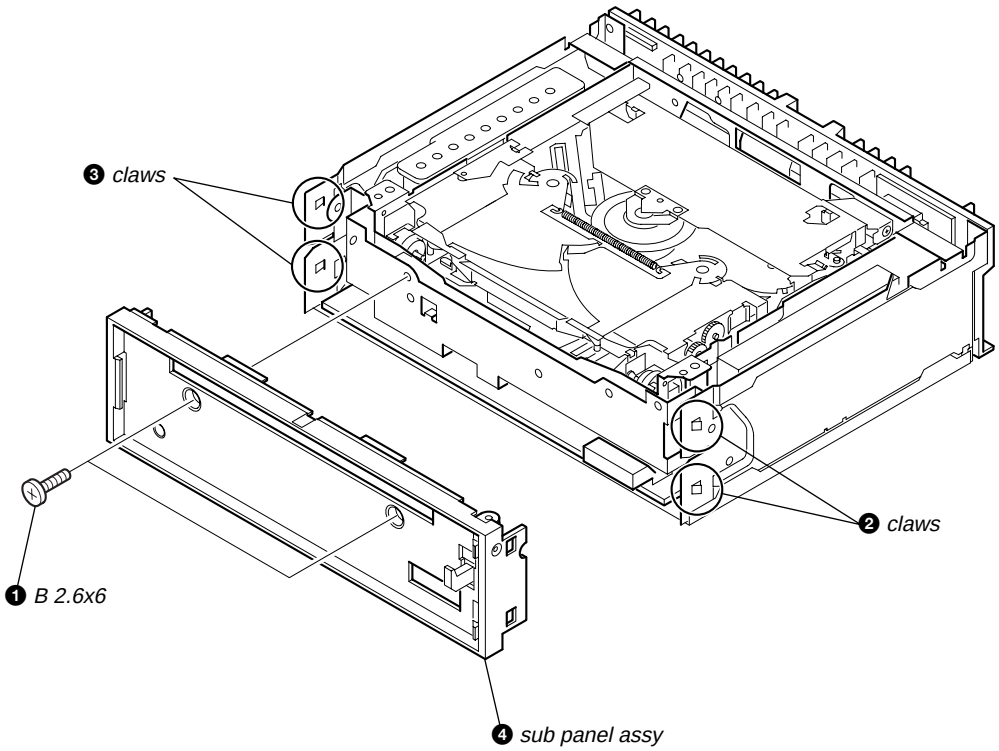
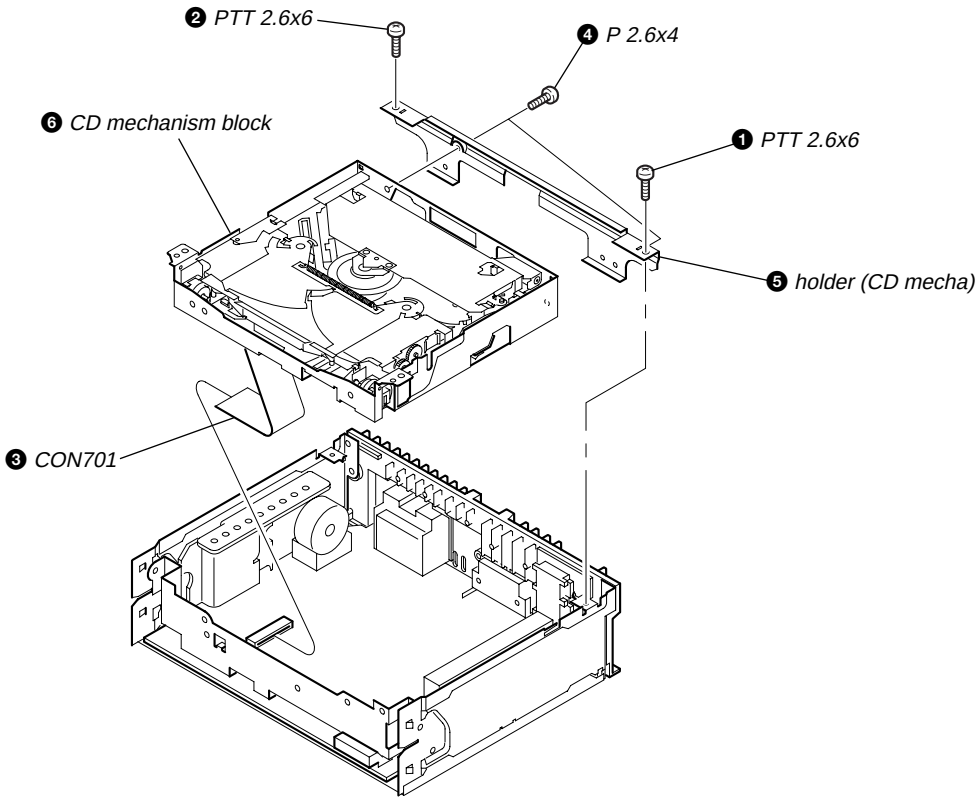
2-10. LEVER (CD ROLLER) SUB ASSY (Page 10)
2-11. LEVER ASSY (CD HOLDER) (Page 11)
2-12. MOTOR (SLED) SUB ASSY (Page 11)

Note : Follow the disassembly procedure in the numerical order given.

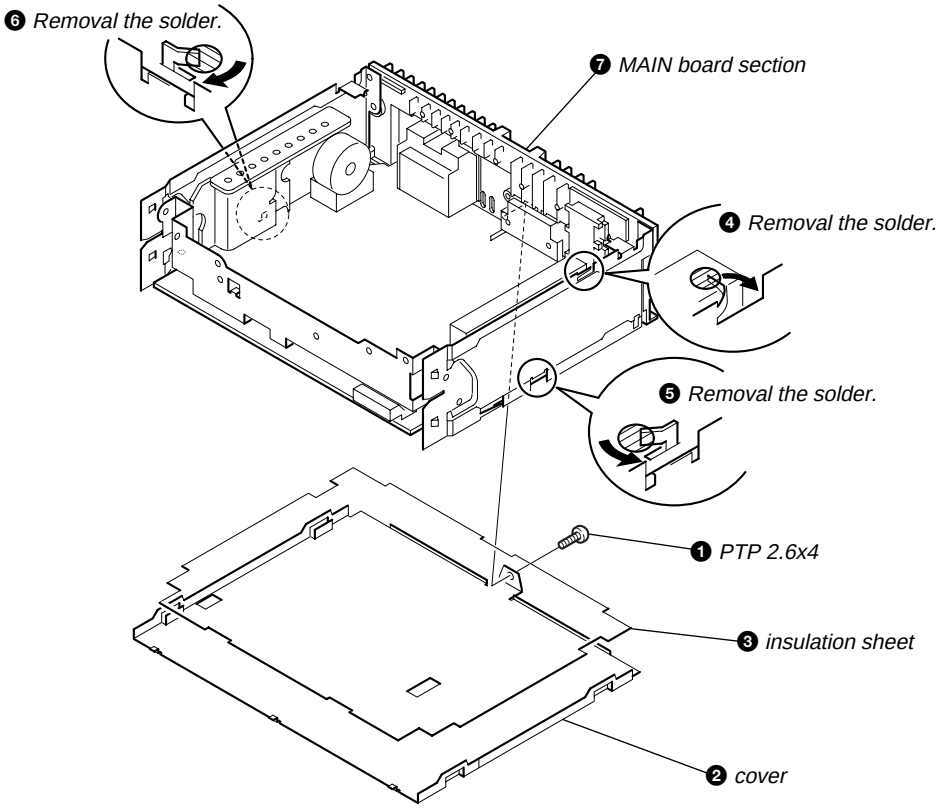
2-1. SUB PANEL ASSY



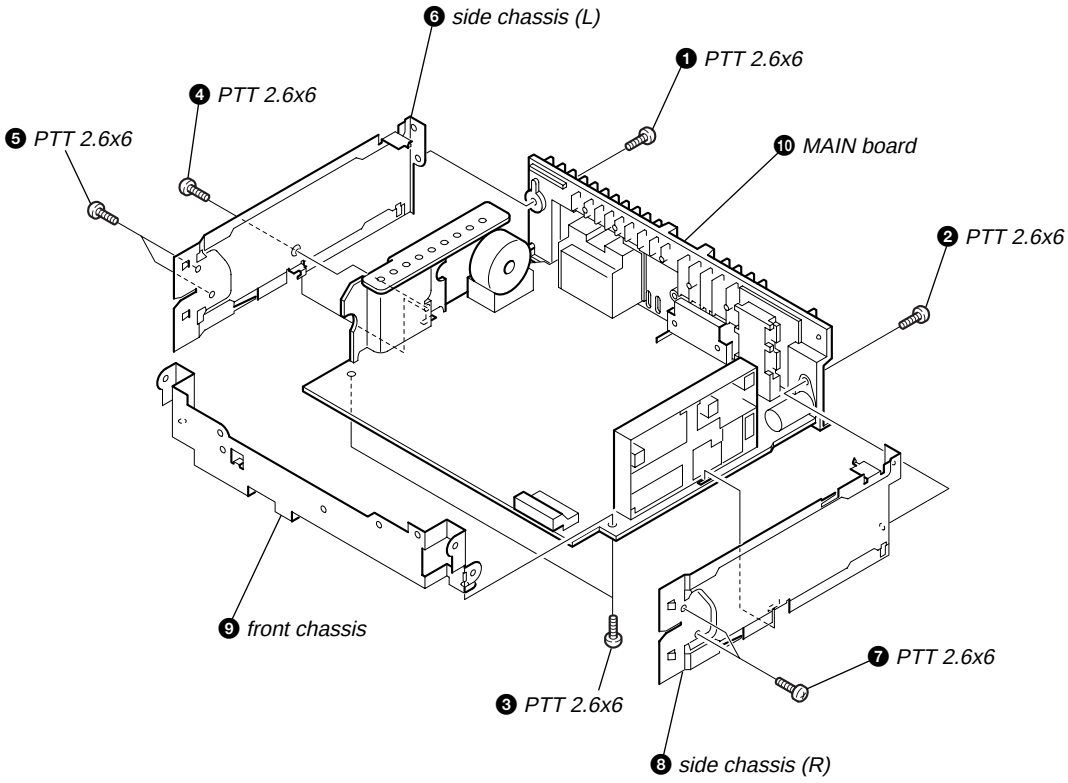
2-2. CD MECHANISM BLOCK



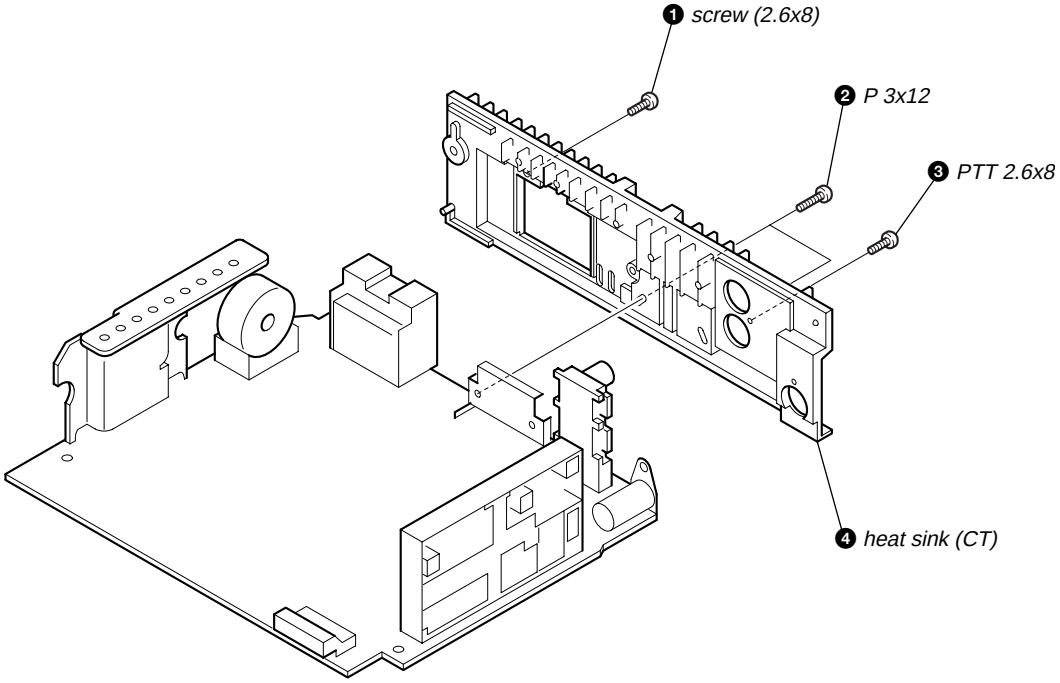
2-3. MAIN BOARD SECTION



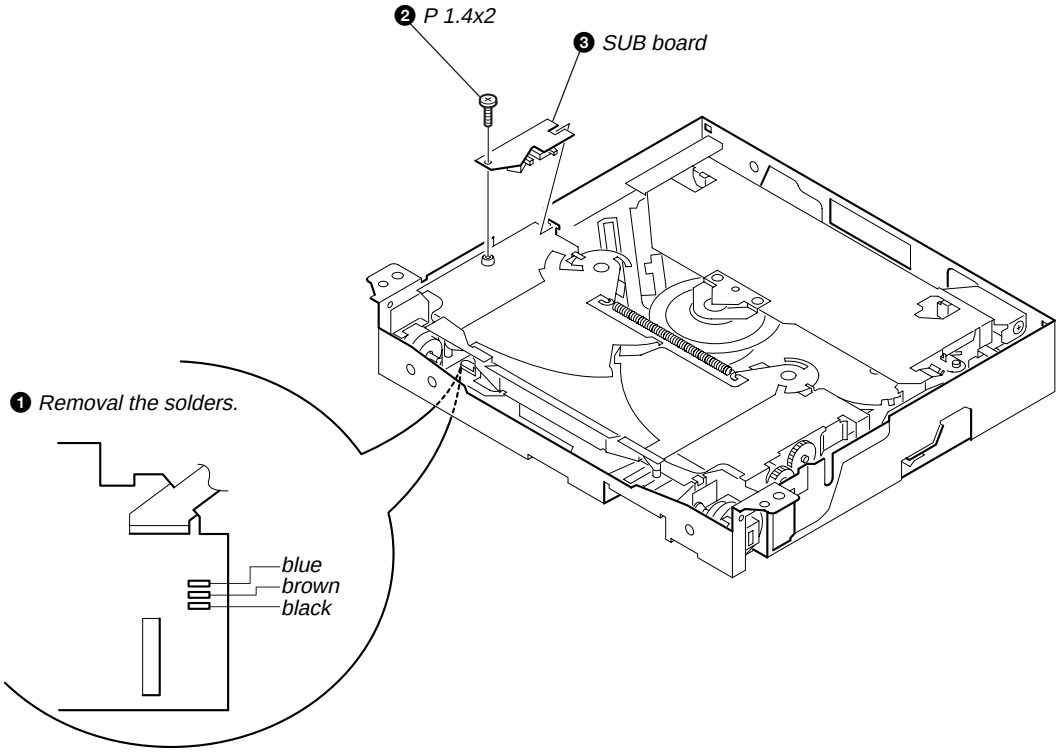
2-4. MAIN BOARD



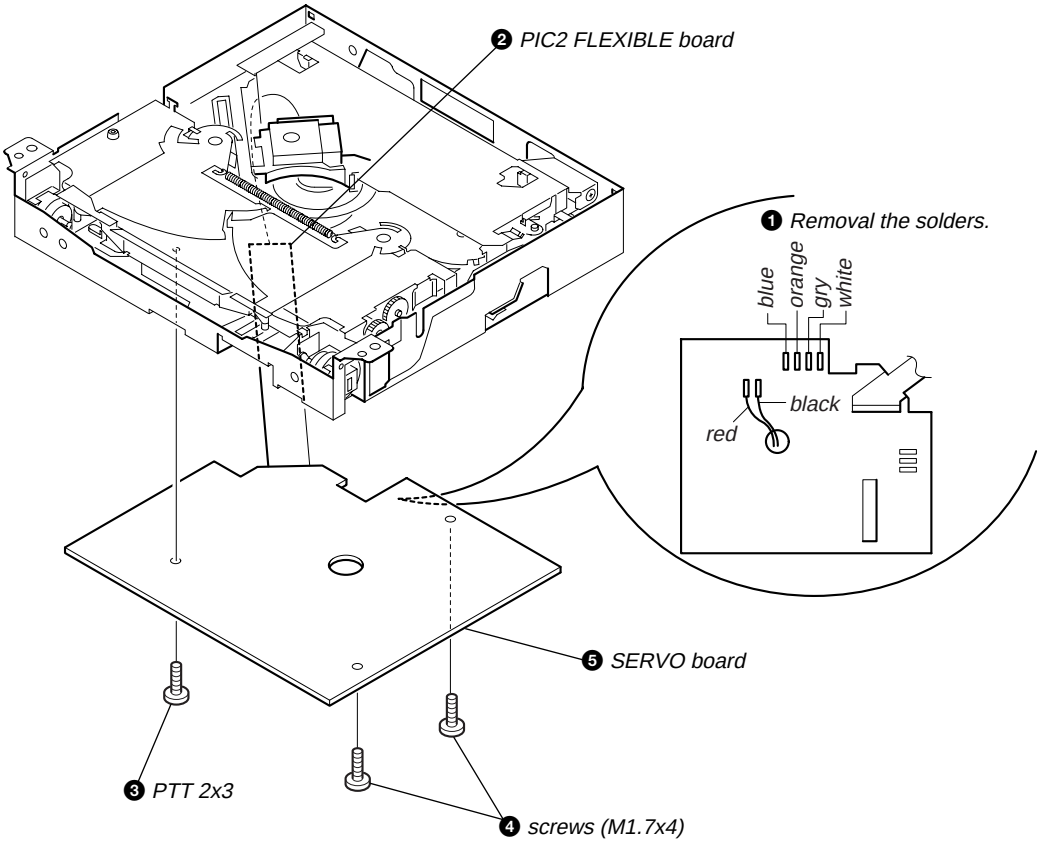
2-5. HEAT SINK (CT)



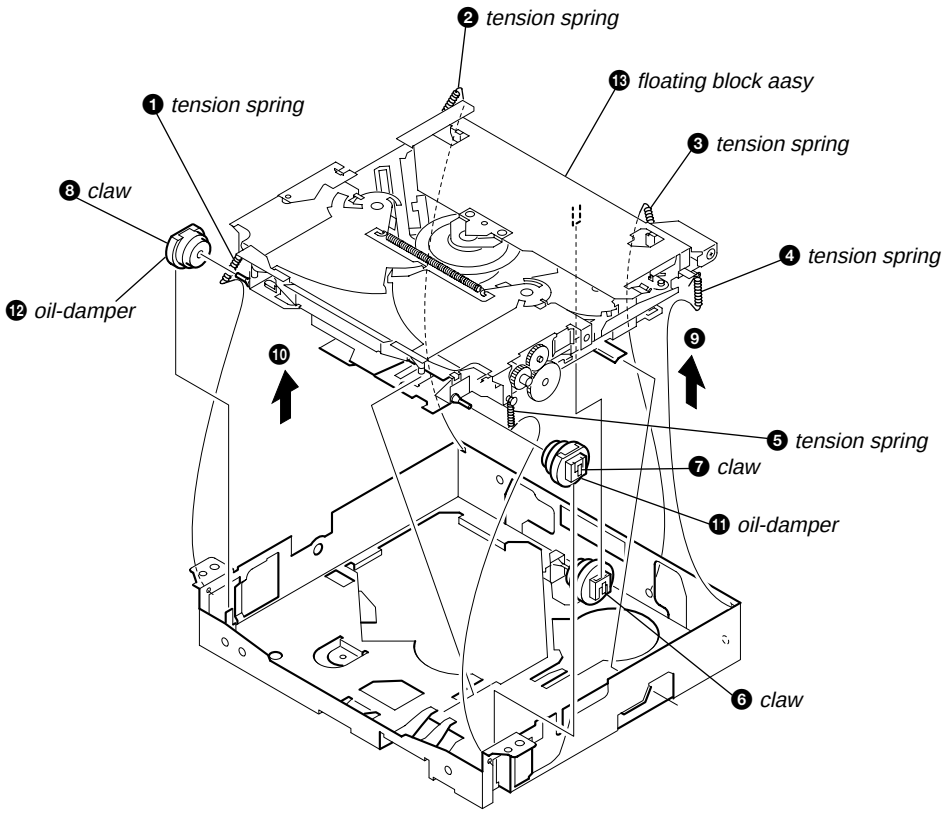
2-6. SUB BOARD



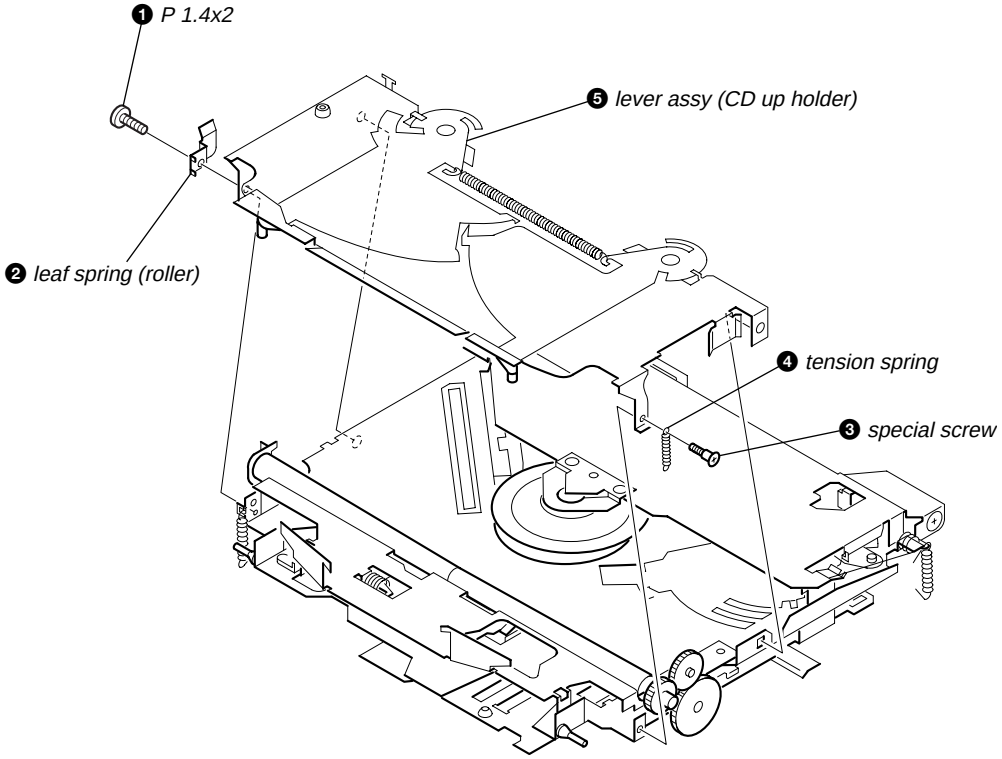
2-7. SERVO BOARD



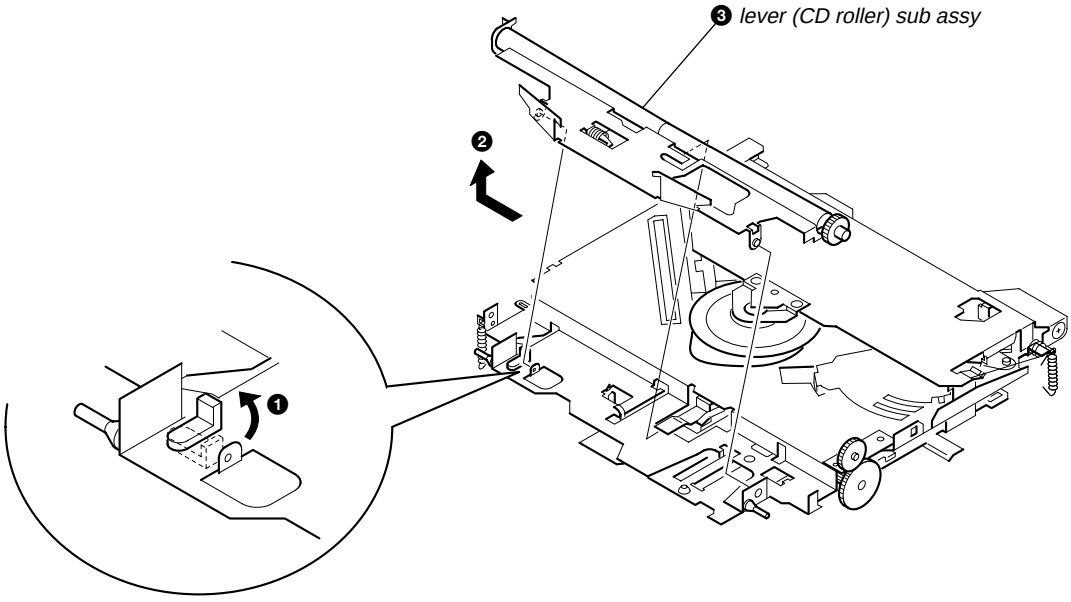
2-8. FLOATING BLOCK ASSY



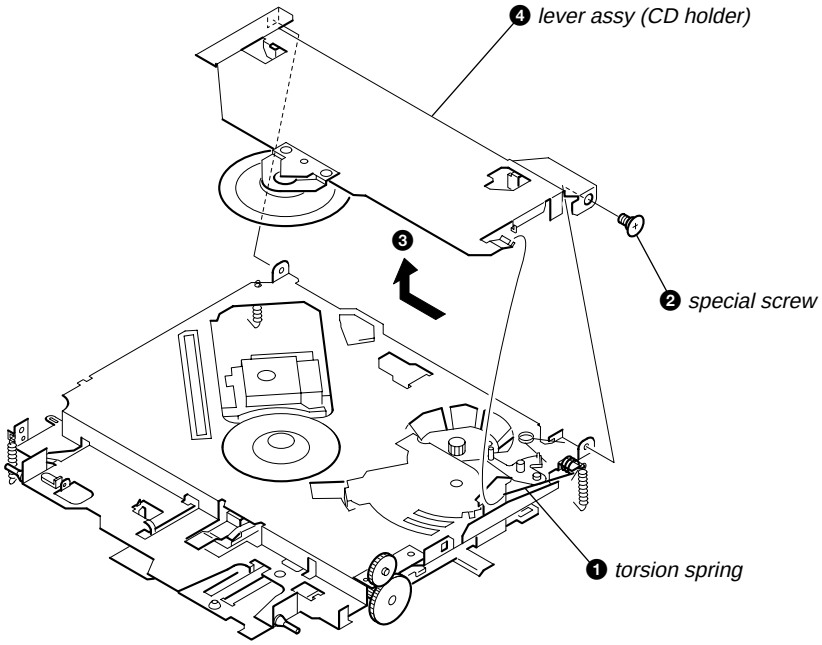
2-9. LEVER ASSY (CD UP HOLDER)



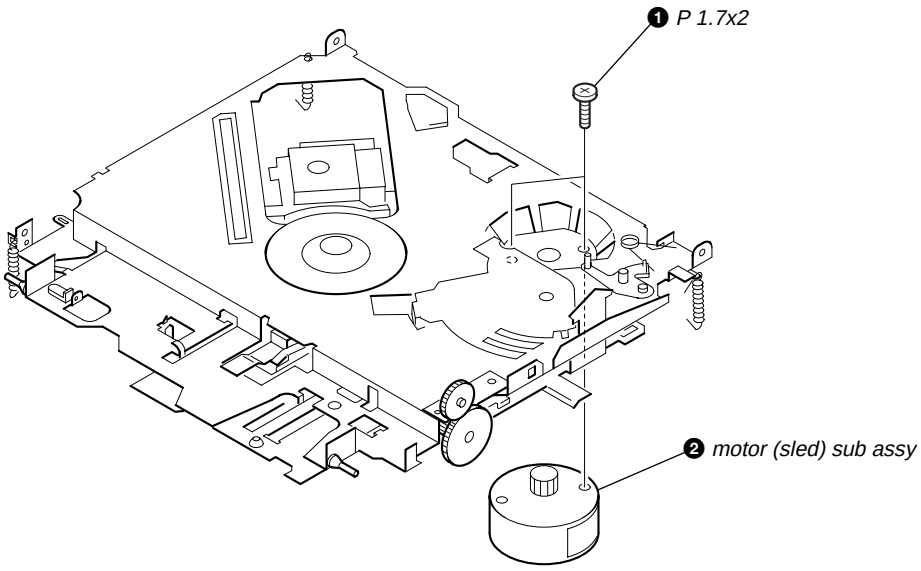
2-10. LEVER (CD ROLLER) SUB ASSY



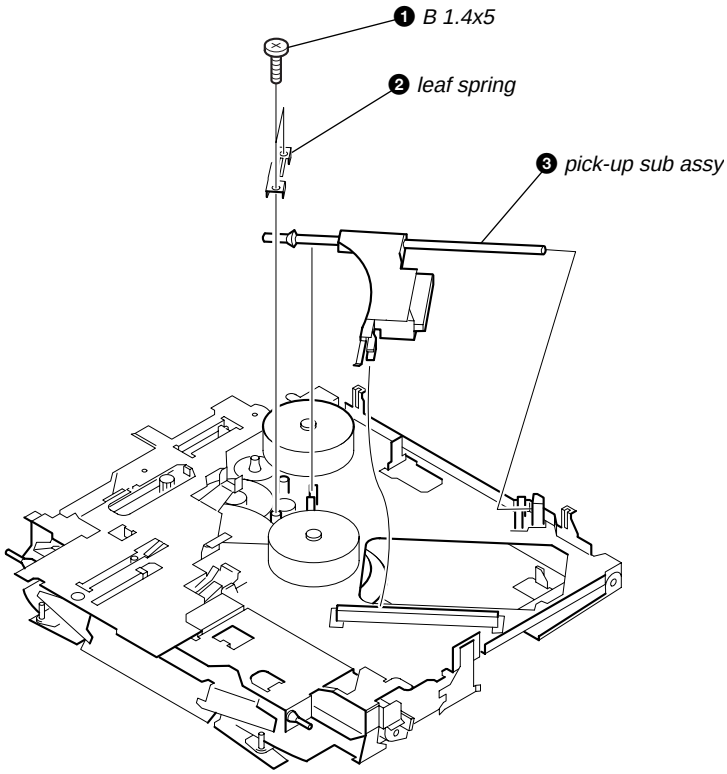
2-11. LEVER ASSY (CD HOLDER)



2-12. MOTOR (SLED) SUB ASSY



2-13. PICK-UP SUB ASSY



SECTION 3
DIAGRAMS

3-1. IC PIN DESCRIPTIONS

• IC202 LC78622NE (DIGITAL SIGNAL PROCESSOR) (SERVO BOARD)

Pin No.	Pin Name	I/O	Pin Description
1	DEFI	I	Defect detection signal (DEF) input (Must be connected to 0 V when unused.)
2	TAI	I	Test input pin A pull-down resister is built-in. Must be connected to 0 V.
3	PDO	O	External VCO control phase comparator output
4	VVSS	—	Internal VCO ground pin Must be connected to 0 V.
5	ISET	—	PDO output current adjustment resister connection pin
6	VVDD	—	Internal VCO power supply pin
7	FR	—	VCO frequency range adjustment
8	VSS	—	Digital system ground pin Must be connected to 0 V.
9	EFMO	O	EFM signal output
10	EFMIN	I	EFM signal input
11	TEST2	I	Test input pin A pull-down resister is built-in. Must be connected to 0 V.
12	CLV+	O	Disc motor control signal output
13	CLV–	O	Can be set to three-value output by microprocessor command.
14	V/P	O	Rough servo/phase control automatic switching monitor output Outputs a high level during rough servo a low level.
15	HFL	I	Track detection signal input This is a schmitt input.
16	TES	I	Tracking error signal input This is a schmitt input.
17	TOFF	O	Tracking off signal output
18	TGL	O	Tracking gain switching signal output Increase the gain when low.
19	JP+	O	Track jump control signal output
20	JP–	O	Three-value output is also possible when specified by microprocessor command.
21	PCK	O	EFM data playback clock monitor signal output Output pin 4.3218 MHz when the phase is locked. Not used. (Open)
22	FSEQ	O	Synchronization signal detection signal output Output a high level when the Synchronization signal detected from the EFM signal and the internaly generated synchronization signal range. Not used. (Open)
23	VDD	—	Digital system power supply pin
24	CONT1	I/O	General-purpose input/output 1 – 5
25	CONT2	I/O	Controlled by serial data commands from the microprocessor.
26	CONT3	I/O	Any of these that are unused must be either set up as input pin ports and connected to
27	CONT4	I/O	0 V, or set up as output pin ports and left open.
28	CONT5	I/O	Not used. (Open)
29	EMPH	O	De-emphasis monitor signal output A high level indicates playback of a de-emphasis disc. General-purpose input/output pin 6. Not used. (Open)
30	C2F	O	C2 flag output pin Not used. (Open)
31	DOUT	O	Digital out signal output (EIJA format) Not used. (Open)
32	TEST3	I	Test input pin A pull-down resister is built-in. Must be connected to 0 V.
33	TEST4	I	Test input pin A pull-down resister is built-in. Must be connected to 0 V.
34	PCCL	I	General-purpose input/output command identifying pin A pull-down resister is built-in. Must be connected to 0 V when used with functions similar to those of LC78622E. H: Control possible only for the general-purpose input/output port command. L: Control possible for all commands.
35	LMUTE	O	Left channel mute signal output General-purpose input/output pin 7
36	LVDD	—	Left channel power supply pin
37	LOUT	O	Left channel output
38	LVSS	—	Left channel ground pin Must be connected to 0 V.
39	RVSS	—	Right channel ground pin Must be connected to 0 V.
40	ROUT	O	Right channel output
41	RVDD	—	Right channel power supply pin

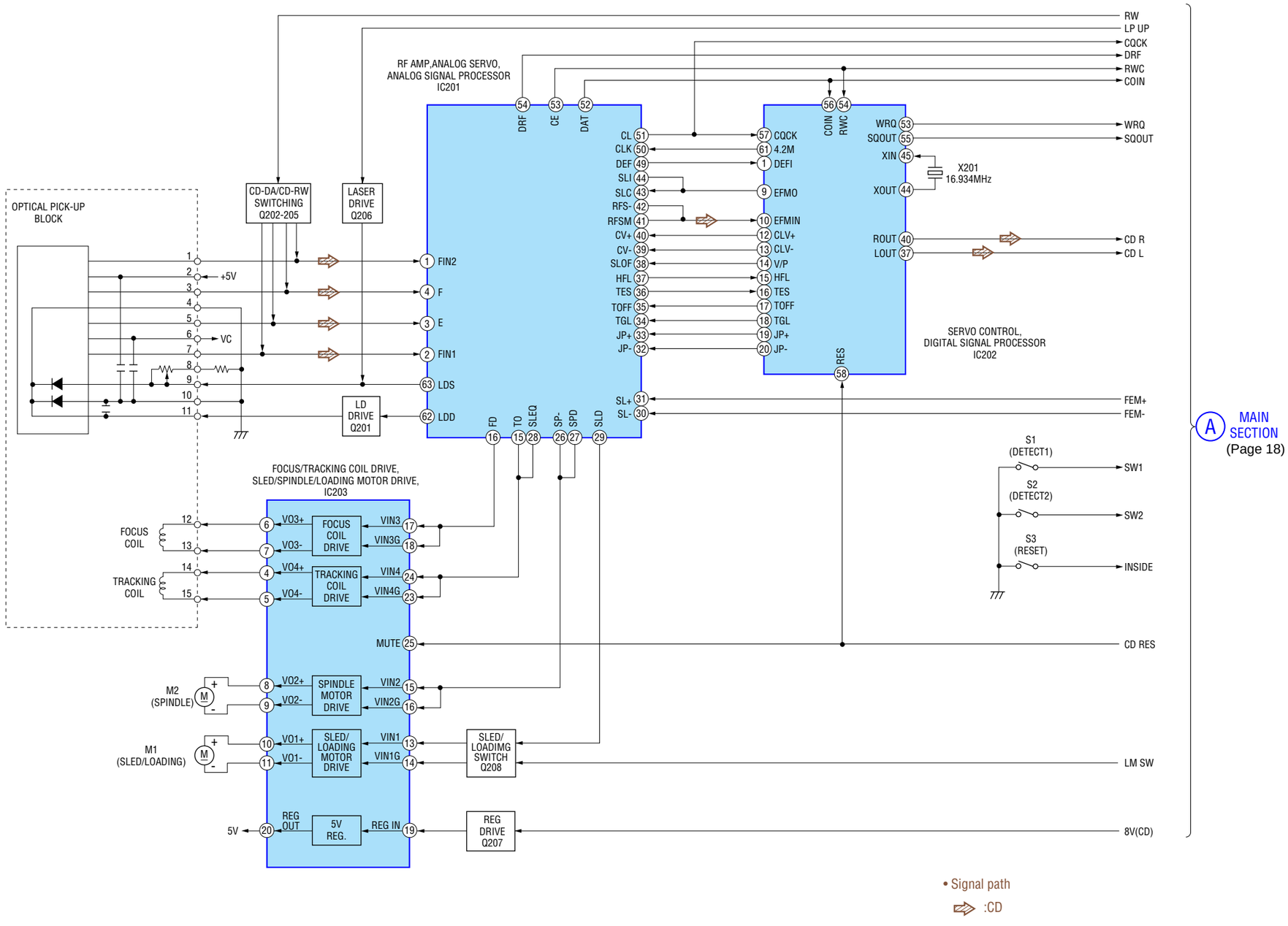
Pin No.	Pin Name	I/O	Pin Description
42	RMUTE	O	Right channel mute signal output General-purpose input/output pin 8
43	XVDD	—	Crystal oscillator power supply pin
44	XOUT	O	Connections for a 16.9344 MHz crystal oscillator element pin
45	XIN	I	
46	XVSS	—	Crystal oscillator ground pin Must be connected to 0 V.
47	SBSY	O	Subcode clock synchronization signal output Not used. (Open)
48	EFLG	O	C1, C2, signal and double error correction monitor pin Not used. (Open)
49	PW	O	Subcode P, Q, R, S, T, U and W output Not used. (Open)
50	SFSY	O	Subcode frame synchronization signal output This signal falls when the subcode are in standby stase. Not used. (Open)
51	SBCK	I	Subcode readout clock input This is a schmitt input. (Must be connected to 0 V when unused.)
52	FSX	O	Output pin for the 7.35 kHz synchronization signal divided from the crystal oscillator Not used. (Open)
53	WRQ	O	Subcode Q output standby output
54	RWC	I	Read/write control signal input This is a schmitt input
55	SQOUT	O	Subcode Q signal output
56	COIN	I	Command input pin from system control microprocessor
57	CQCK	I	Input for both the command input acquisition clock and the SQOUT pin subcode readout clock input pin This is a schmitt input.
58	RES	I	Reset signal input This pin must be set low briefly after power is first applied.
59	TST11	O	Test output pin Leave open. (Normally output a low level.) Not used. (Open)
60	16M	O	16.9344 MHz output pin Not used. (Open)
61	4.2M	O	4.2336 MHz output pin
62	TEST5	I	Test input pin A pull-down resister is built-in. Must be connected to 0 V.
63	CS	I	Chip select signal input A pull-down resister is built-in. Must be connected to 0 V if not controlled.
64	TEST1	I	Test input pin No pull-down resister. Must be connected to 0 V.

• IC901 LC72358N-9B50 (SYSTEM CONTROL) (MAIN BOARD)

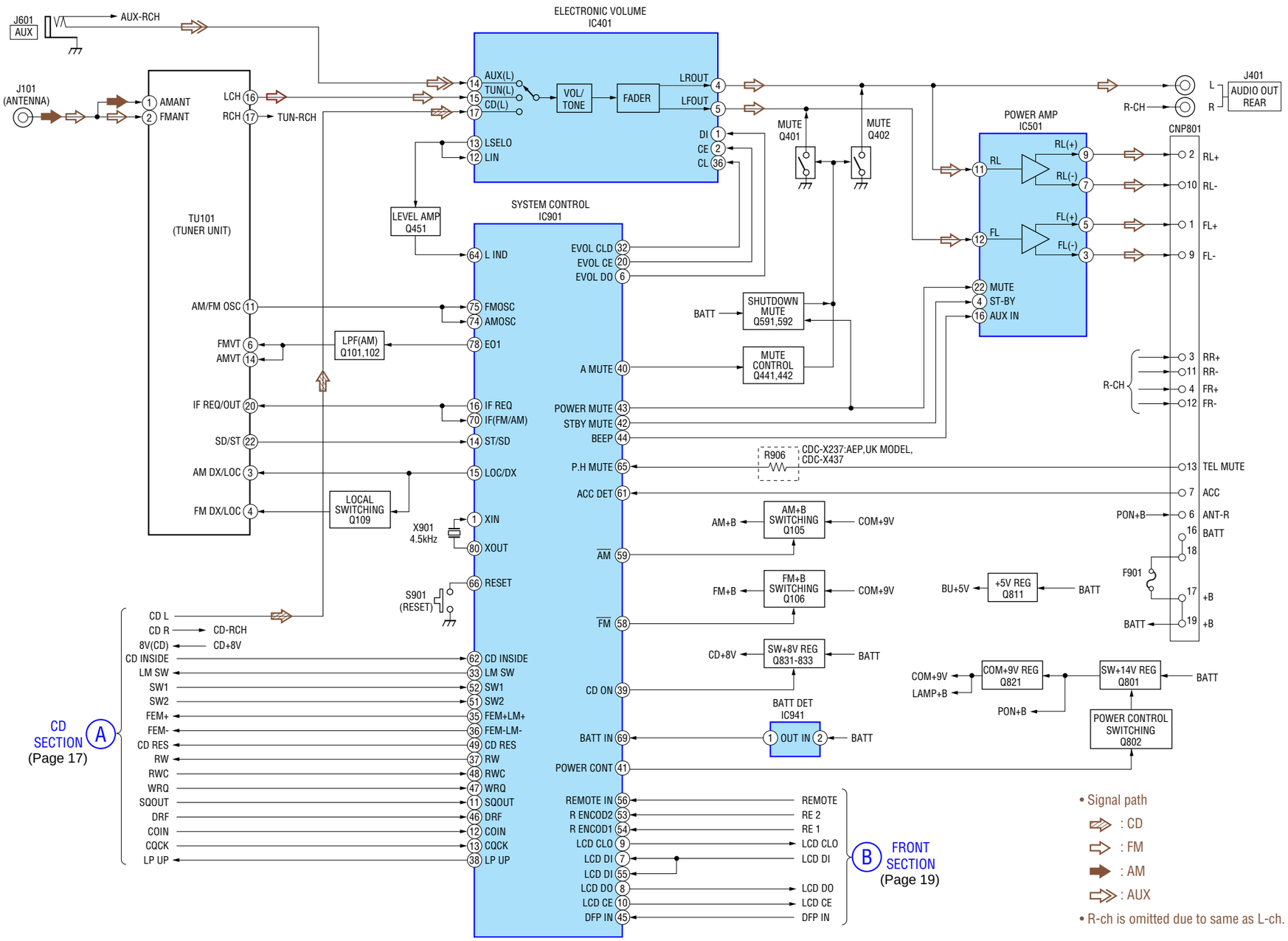
Pin No.	Pin Name	I/O	Pin Description
1	XIN	I	System clock oscillator input (4.5 MHz)
2	TEST2	—	Not used. (Open)
3	CD DATA IN	—	Not used. (Open)
4	NC	—	Not used. (Open)
5	NC	—	Not used.
6	E-VOL DO	O	Date output for volume level control
7	LCD DI	I	LCD driver date signal input
8	LCD DO	O	LCD driver date signal output
9	LCD CLO	O	LCD driver clock signal output
10	LCD CE	O	LCD driver CE signal output
11	SQ OUT	I	Sub-code Q input terminal
12	COIN	O	Command output terminal for DSP
13	CQCK	O	Transfer-out clock for command output or output terminal for sub-code transfer clock from SQ OUT
14	SD/ST	I	Stereo signal input when receiving “H”=MONO, “L”=ST FM reception. Channel detection signal input when FM/AM seeking “H”=detect channel.
15	LOC/DX	O	LOC/DX switching output when in the radio seek mode “H”=LOC, “L”=DX.
16	IF REQ	O	IF count signal request output
17	NC	—	FM/AM power switch output “H”=AM, “L”=FM Not used. (Open)
18	TU ON	O	Radio power switch output “H”=Radio mode Not used. (Open)
19	NC	—	Not used. (Open)
20	E-VOL CE	O	CE output for volume level control
21	ACC CONT	—	Not used. (Open)
22, 23	KS4, KS3	O	Initial setting diode matrix output Not used. (Open)
24 – 26	KS2 – KS0	O	Initial setting diode matrix output
27, 28	K3, K2	I	Initial setting diode matrix input
29	K1	I	Initial setting diode matrix input CD test mode, pulled down when not used.
30	K0	I	Initial setting diode matrix input
31	VDD	—	Power supply pin
32	E-VOL CLO	O	Clock output for volume level control
33	LM SW	O	Loading or SLED GAIN switch output
34	NC	—	Not used. (Open)
35	FEM+ LM+	O	Sled motor control terminal
36	FEM– LM–	O	Sled motor control terminal
37	RW	O	RW disc control output Normal set to “H”.
38	LP UP	O	RW disc control output Normal set to “L”.
39	CD ON	O	CD power switch output
40	A-MUTE	O	Audio mute signal output
41	POWER CONT	O	Power control signal output
42	ST-BY MUTE	O	ST-BY mute signal output
43	POWER MUTE	O	Power mute signal output
44	BEEP	O	BEEP output (3 kHz, 50 ms)
45	DFP IN	I	Front panel detection signal input
46	DRF	I	“Detect RF” RF level detection input Pulled up when not used.
47	WRQ	I	Sub-code Q output standby input terminal
48	RWC	O	Read/write control output terminal
49	CD RES	O	DSP reset output terminal
50	OPEN	—	Not used. (Open)
51	SW2	I	12 cm disc detection/12 cm disc ejection and detection
52	SW1	I	Leading motor start detection
53	R-ENCOD2	I	Rotary encoder input 2
54	R-ENCOD1	I	Rotary encoder input 1

Pin No.	Pin Name	I/O	Pin Description
55	LCD-DI	I	LCD driver date signal input
56	REMOTE IN	I	Remote controller input, pulled up when not used, only CDC-X437 US model.
57	LED	O	Not used. (Open)
58	$\overline{FM}$	O	FM/AM power switch output "H"=AM, "L"=FM
59	$\overline{AM}$	O	FM/AM power switch output "L"=AM, "H"=FM
60	NC	—	Not used. (Open)
61	ACC DET	I	ACC (accessory power) ON/OFF LEVEL input OFF=fault mode.
62	CD INSIDE	I	Pick up inner track position detection (LMT SW)
63	TEST	I	CD test mode Pulled down when not used.
64	L IND	I	Voltage input for level indicater Pulled down when not used.
65	PH. MUTE	I	External mute control, "L"=–20 dB mute, pulled up when not used. (EUR)
66	RESET	I	System reset signal input "L"=system reset
67	ACC IN	I	ACC (accessory power) ON/OFF input OFF=fault mode.
68	SNS	I	Backup detection signal input
69	BATT IN	I	Input battery ON/OFF
70	IF (FM/AM)	I	IF count signal input (FM/AM)
71	EO3	—	Not used. (Open)
72	SUB PD	—	Not used. (Open)
73	VDD	—	Power supply pin
74	AM OSC	I	AM channel transmission input
75	FM OSC	I	FM channel transmission input
76	VSS	—	Connected to GND
77	EO2	—	Not used. (Open)
78	EO1	O	Error out from change pump (for FM/AM)
79	TEST1	—	Not used. (Open)
80	XOUT	O	System clock oscillator output (4.5 MHz)

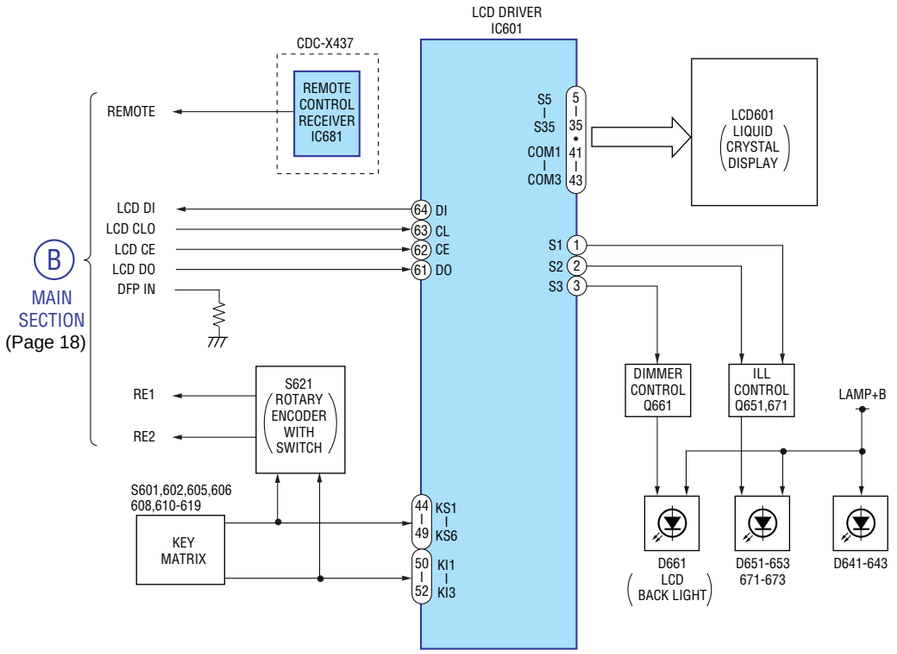
3-2. BLOCK DIAGRAM — CD SECTION —



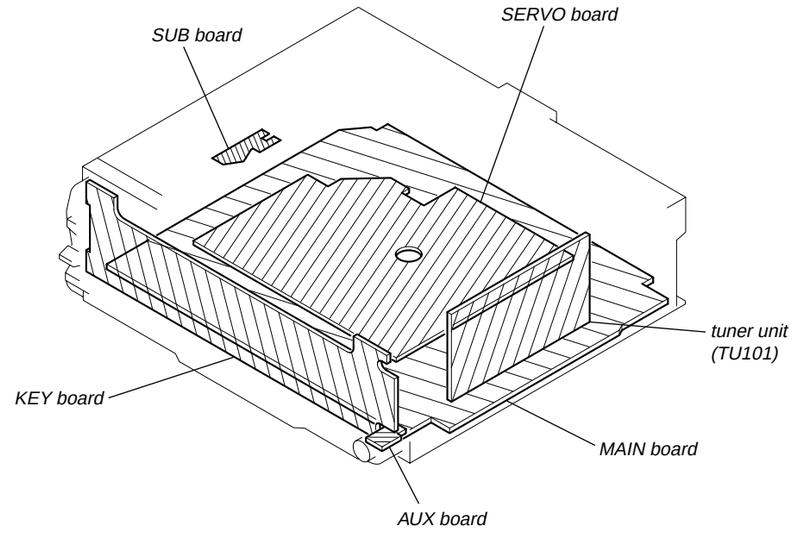
3-3. BLOCK DIAGRAM — MAIN SECTION —



3-4. BLOCK DIAGRAM — FRONT SECTION —



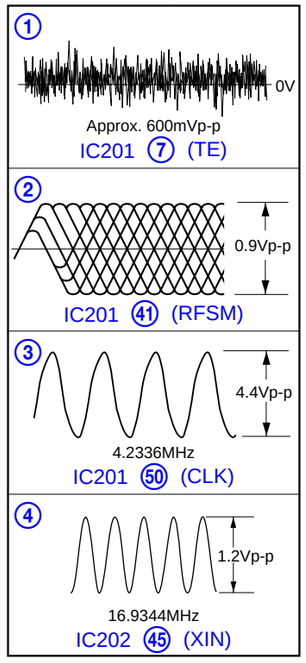
3-5. CIRCUIT BOARDS LOCATION



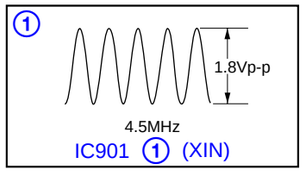
• Waveforms

— Servo Board —

(MODE: CD PLAY)



— Main Board —



3-6. PRINTED WIRING BOARDS — CD MECHANISM SECTION — • Refer to page 19 for Circuit Boards Location.

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

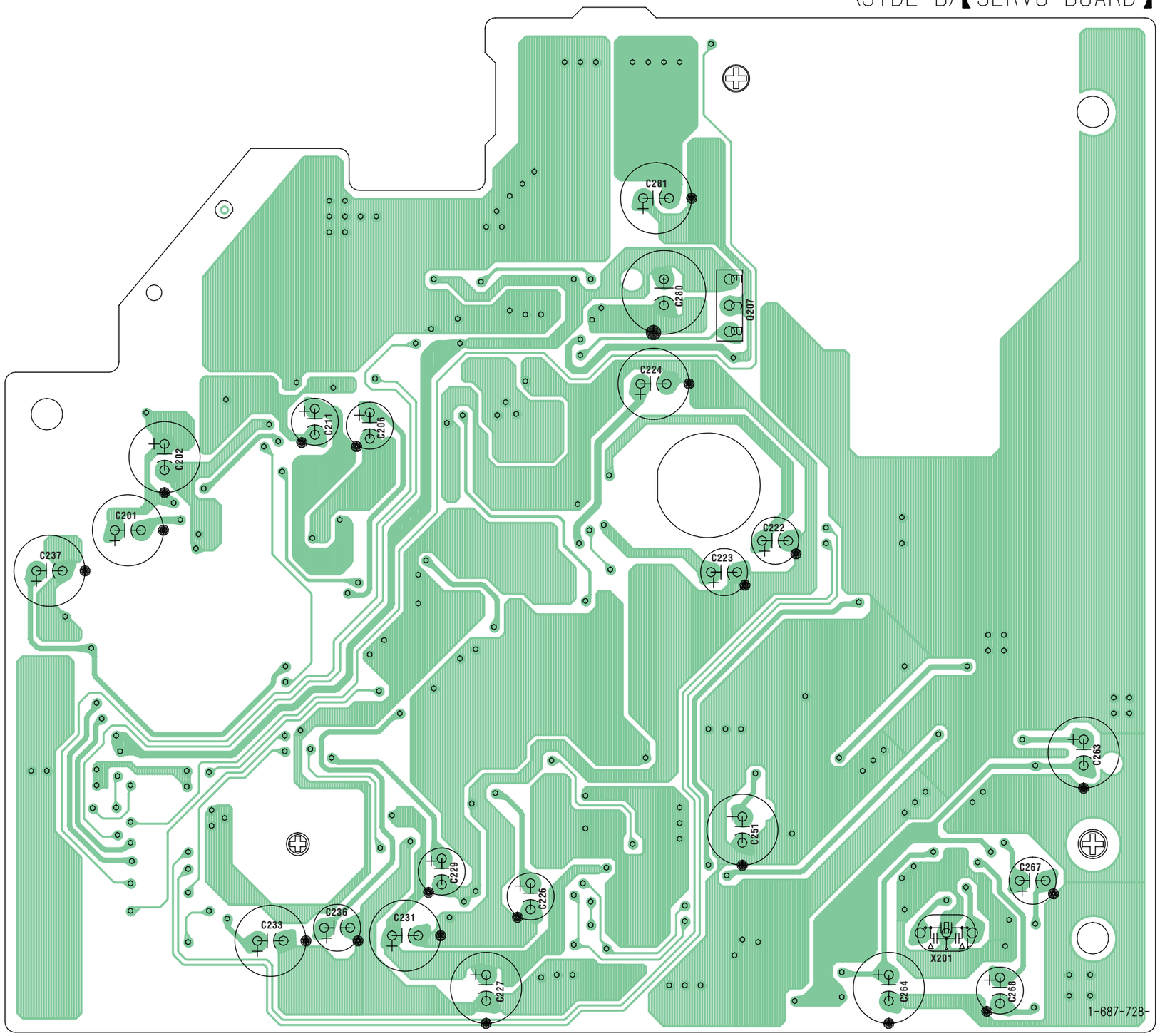
- ▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM/MW/LW
  - ⇨ : CD

for printed wiring boards:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

(SIDE B)【SERVO BOARD】



【SERVO BOARD】(SIDE A)

M1 (SLED)

S3 (RESET)

BLU ORG GRY WHT

FEED+ FEED- GND RST SW

SP+ SP- RED BLK

M2 (SPINDLE)

RED BLK

OPTICAL PICK-UP BLOCK

IC203 IC202 IC201

【SUB BOARD】

S2 (DETECT2)

S1 (DETECT1)

BLU BRN BLK

1-687-803-

BLU BRN BLK

A MAIN BOARD CON701 (Page 23)

1-687-728-

• **Semiconductor Location**

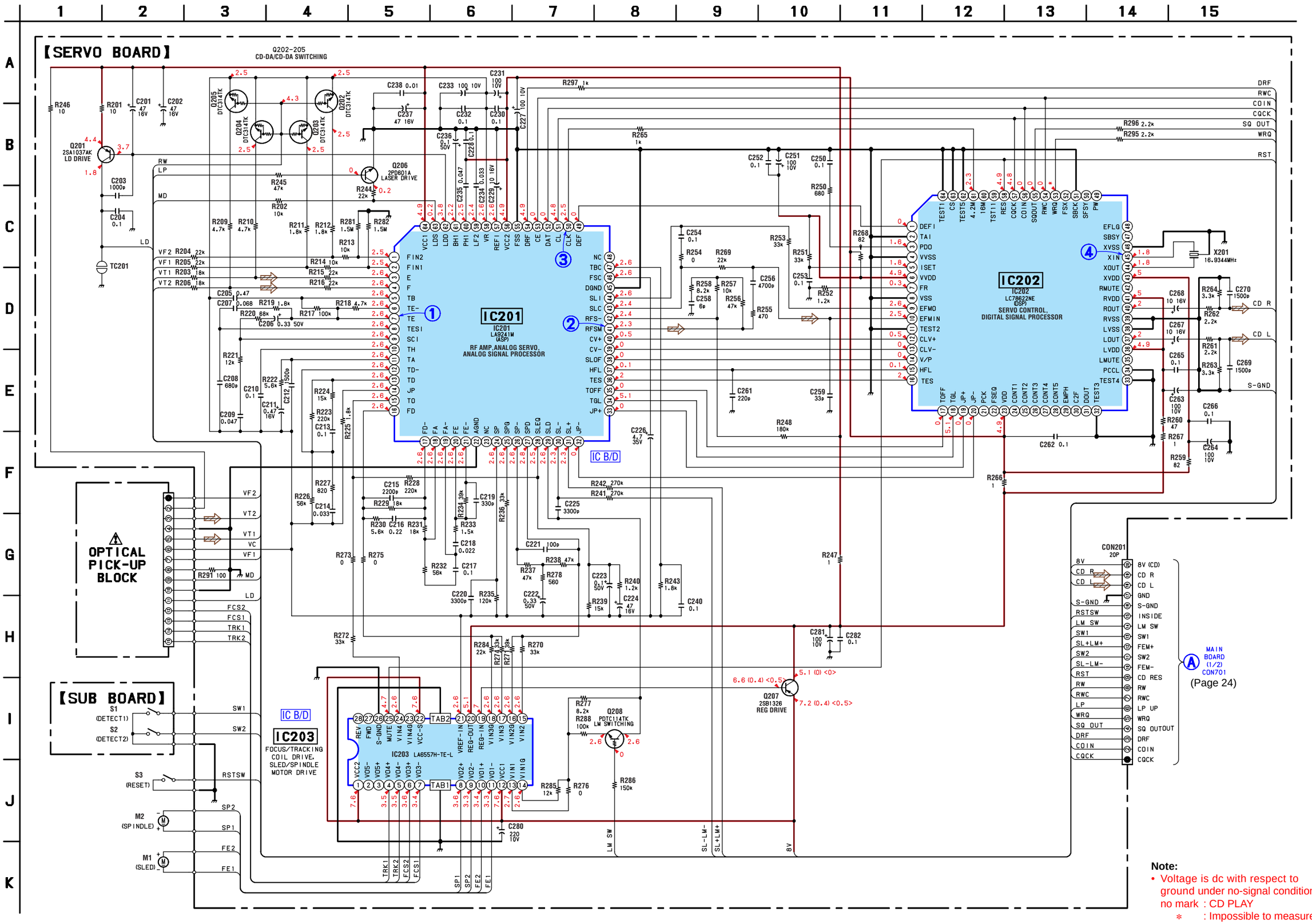
Ref. No.	Location
IC201	G-7
IC202	H-3
IC203	D-7
Q201	G-10
Q202	G-9
Q203	H-9
Q204	G-9
Q205	G-9
Q206	G-9
(Q207)	D-5
Q208	E-7

( ): SIDE B

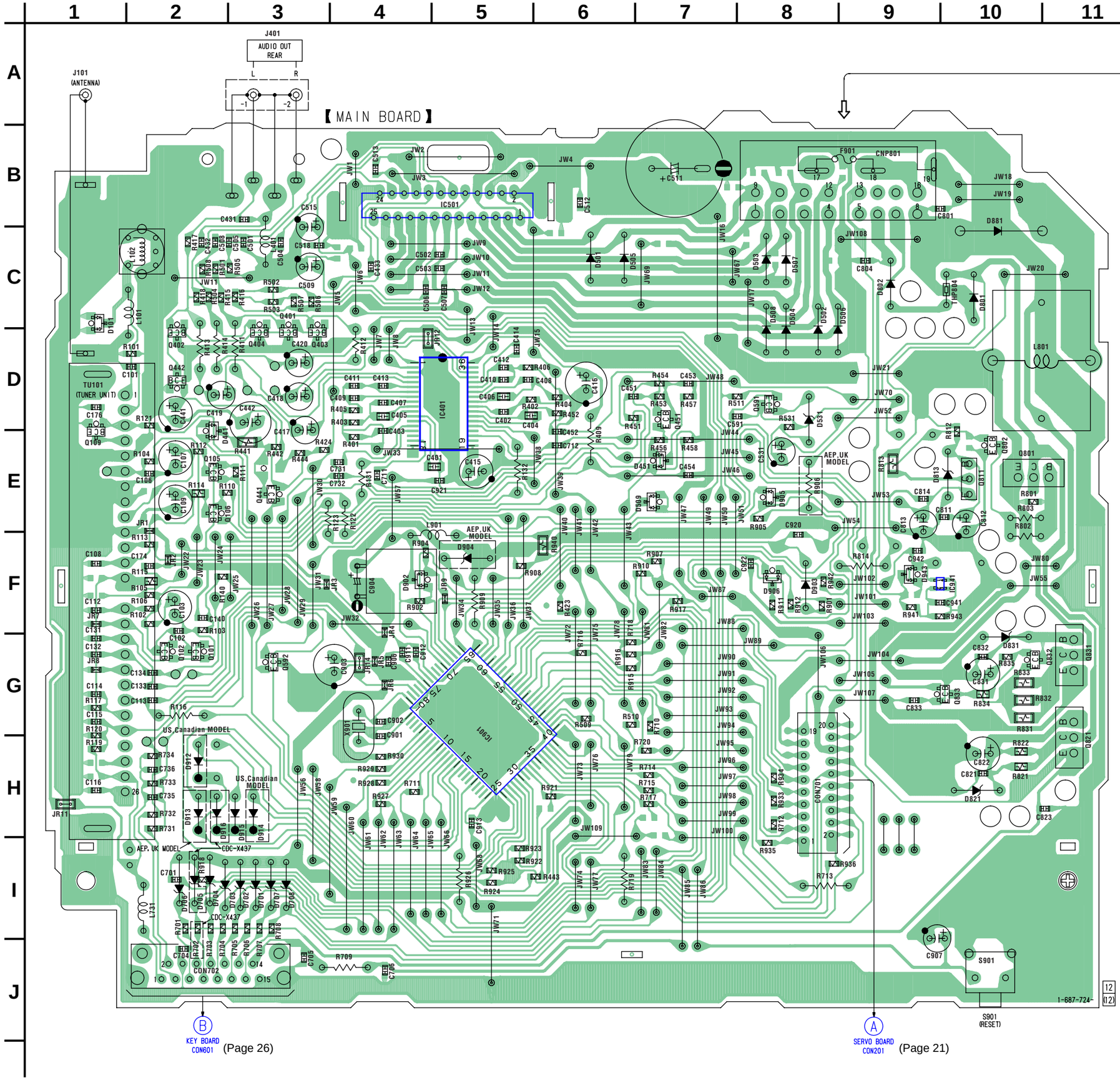
• Refer to page 19 for Waveforms.

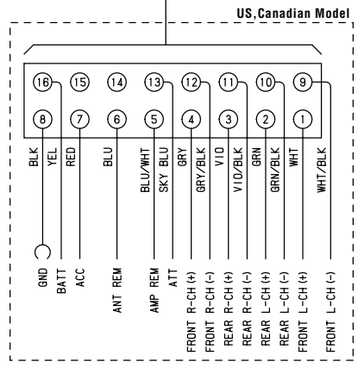
3-7. SCHEMATIC DIAGRAM — CD MECHANISM SECTION —

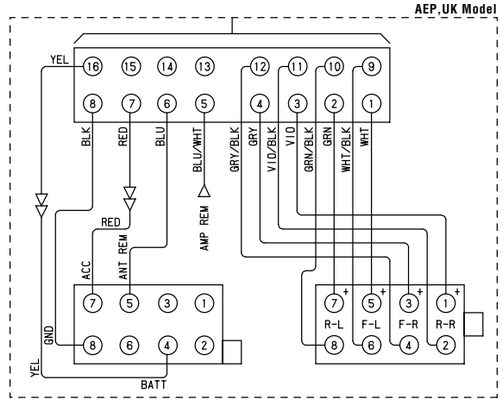
• Refer to page 28 for IC Block Diagrams.



3-8. PRINTED WIRING BOARD — MAIN SECTION — • Refer to page 19 for Circuit Boards Location.







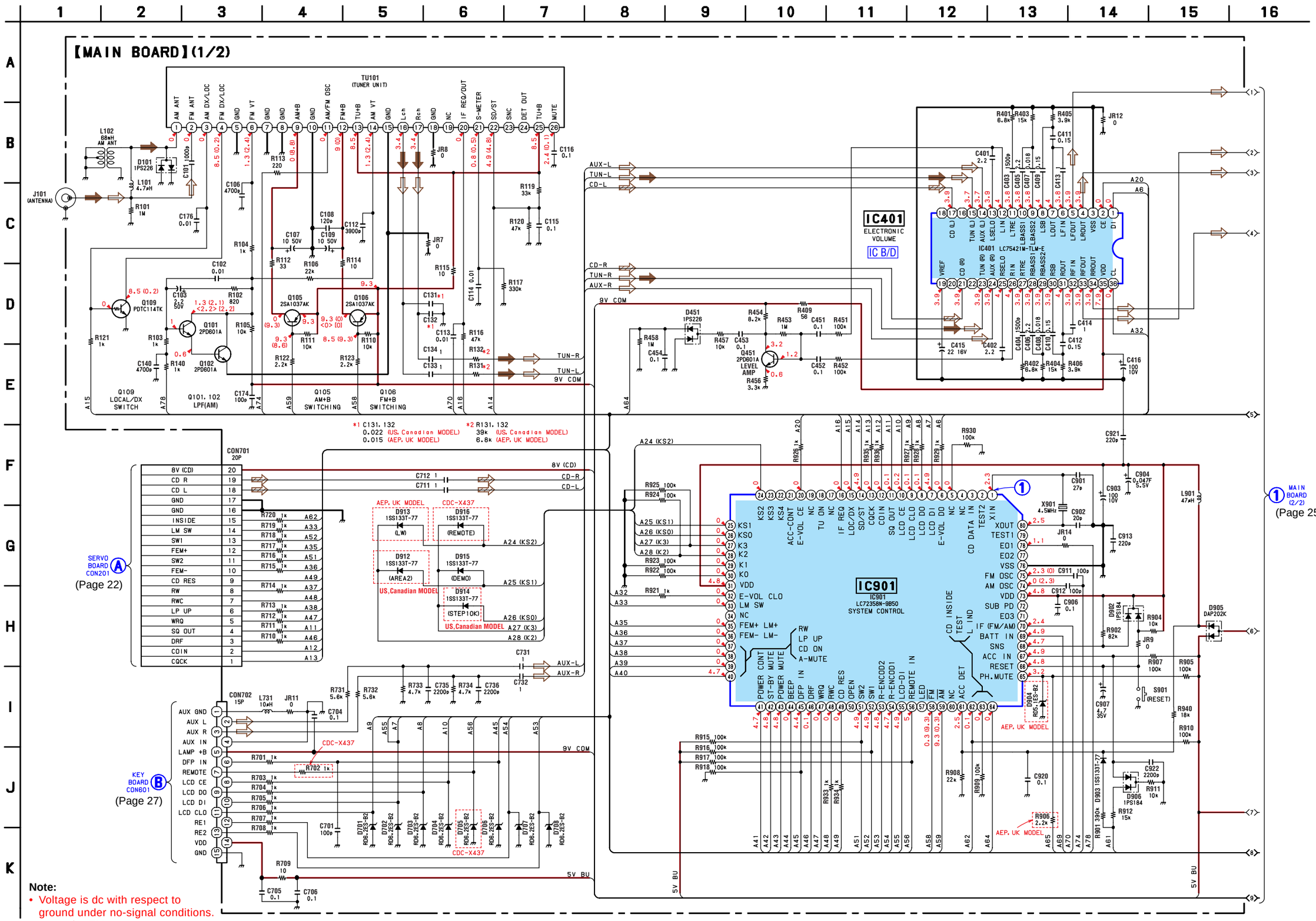
• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D101	C-1	D913	H-2
D441	E-2	D914	H-3
D451	E-7	D915	H-3
D501	C-6	D916	H-2
D502	C-8	D943	F-9
D503	C-8		
D504	C-8	IC401	D-5
D505	C-6	IC501	B-5
D506	C-9	IC901	G-5
D507	C-8	IC941	F-10
D508	C-8		
D509	E-7	Q101	G-2
D531	D-8	Q102	G-2
D701	I-3	Q105	E-2
D702	I-3	Q106	E-2
D703	I-2	Q109	E-1
D704	I-2	Q401	D-3
D705	I-2	Q402	D-2
D706	I-2	Q403	D-3
D707	I-3	Q404	D-3
D708	I-3	Q441	E-3
D801	C-10	Q442	D-2
D802	C-9	Q451	D-7
D813	E-10	Q591	D-8
D821	H-10	Q592	G-3
D831	G-10	Q801	E-10
D881	C-10	Q802	E-10
D902	F-4	Q811	E-10
D903	F-8	Q821	H-11
D904	F-5	Q831	G-11
D905	E-8	Q832	G-10
D906	F-8	Q833	G-10
D912	H-2		

• Refer to page 19 for Waveform.

3-9. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) —

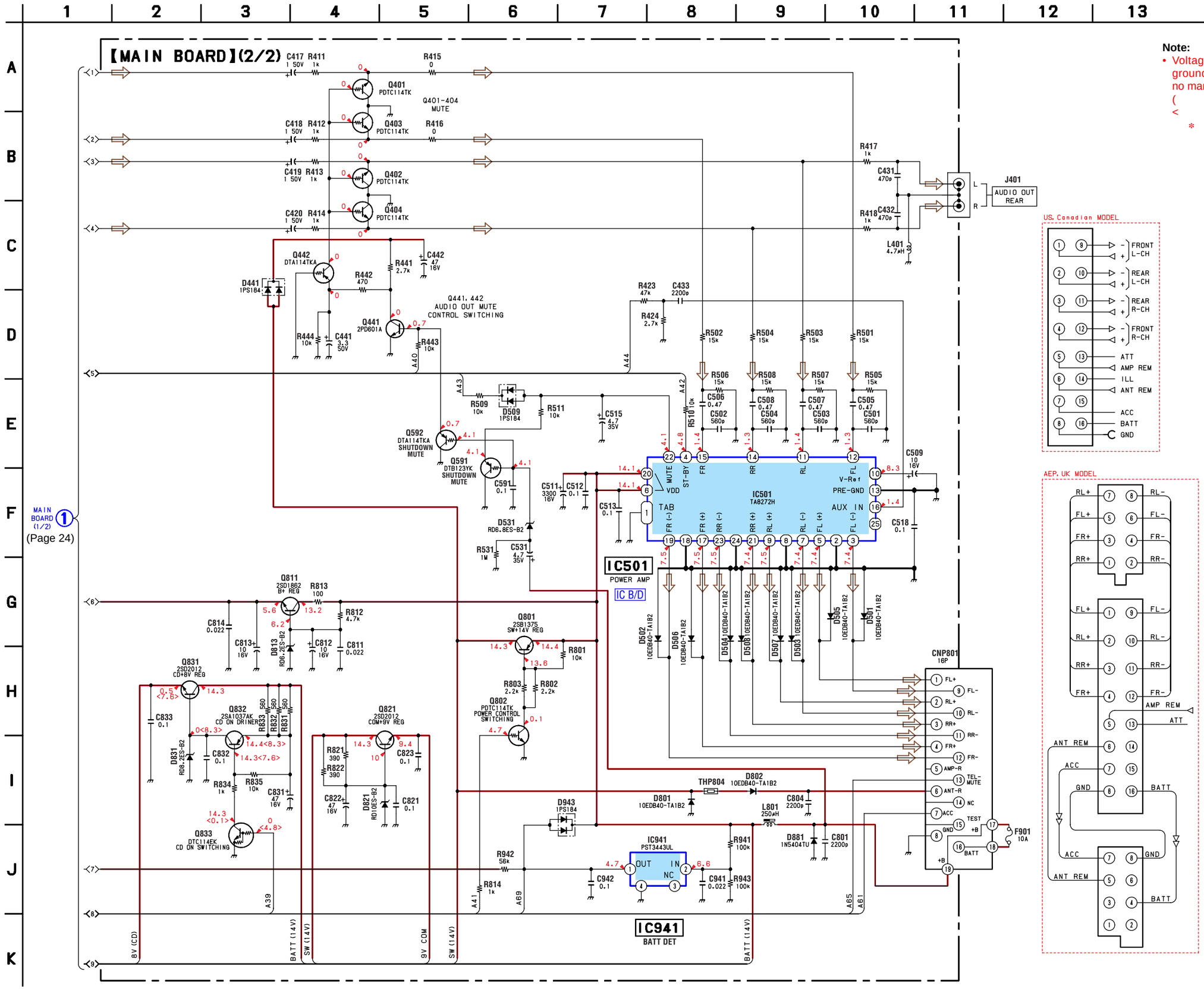
• Refer to page 28 for IC Block Diagram.



Note:

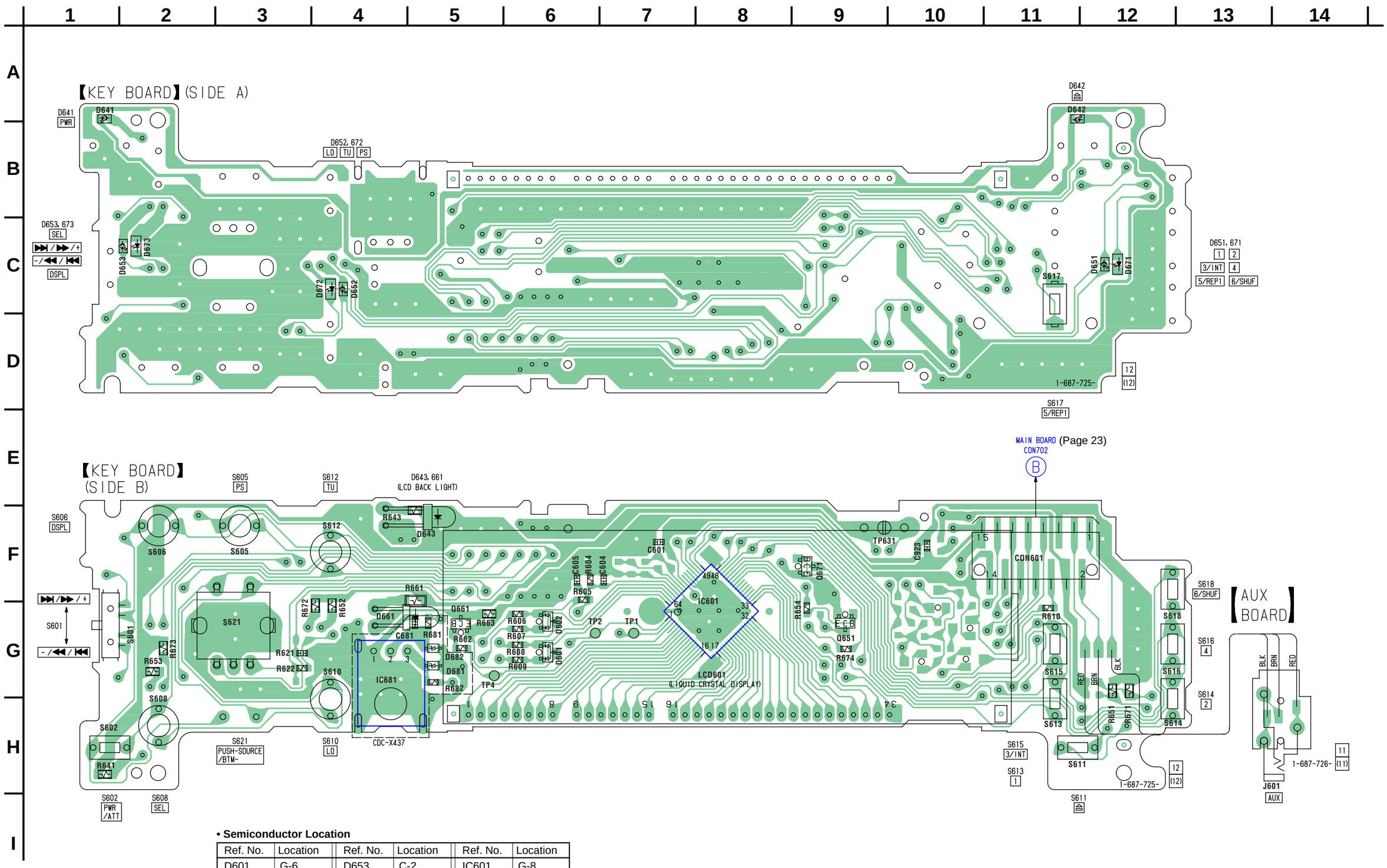
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : FM
  ( ) : AM/MW/LW
  < > : CD PLAY
  ✻ : Impossible to measure

3-10. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 28 for IC Block Diagram.



Note:
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : FM
  ( ) : AM/MW/LW
  < > : CD PLAY
  ∗ : Impossible to measure

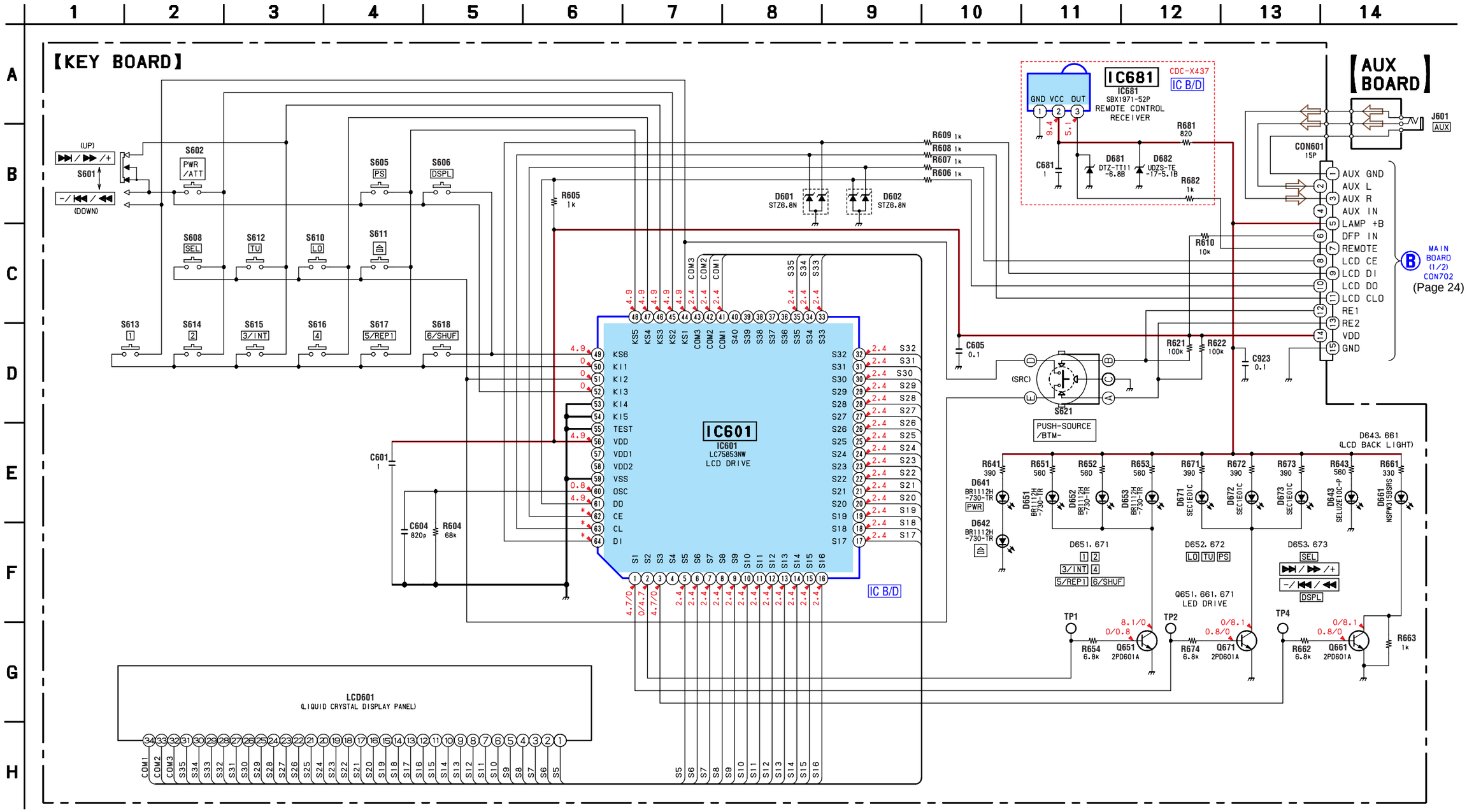
3-11. PRINTED WIRING BOARDS — FRONT SECTION — • Refer to page 19 for Circuit Boards Location.



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D601	G-6	D653	C-2	IC601	G-8
D602	G-6	D661	G-4	IC681	G-4
D641	A-1	D671	C-12		
D642	C-12	D672	C-4	Q651	G-9
D643	F-5	D673	C-2	Q661	G-5
D651	C-12	D681	G-5	Q671	F-9
D652	C-4	D682	G-5		

3-12. SCHEMATIC DIAGRAM — FRONT SECTION — • Refer to page 29 for IC Block Diagrams.

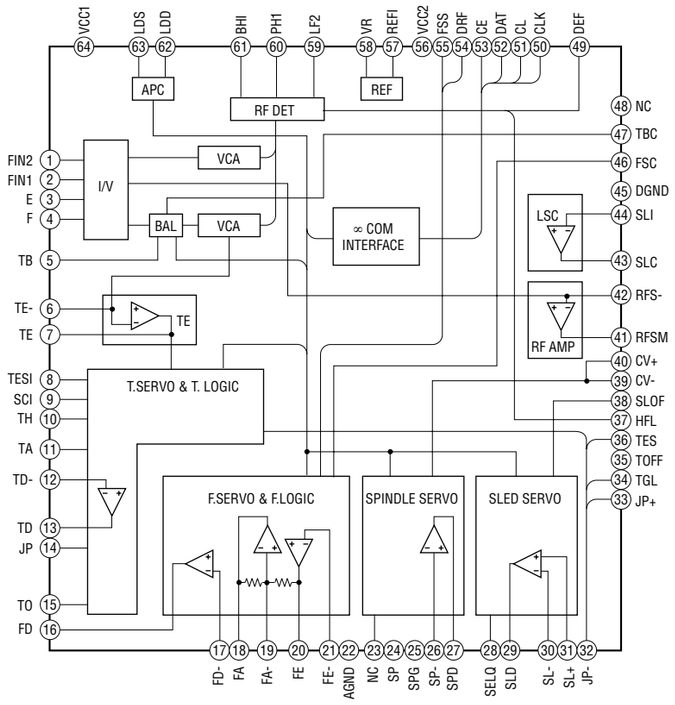


Note:

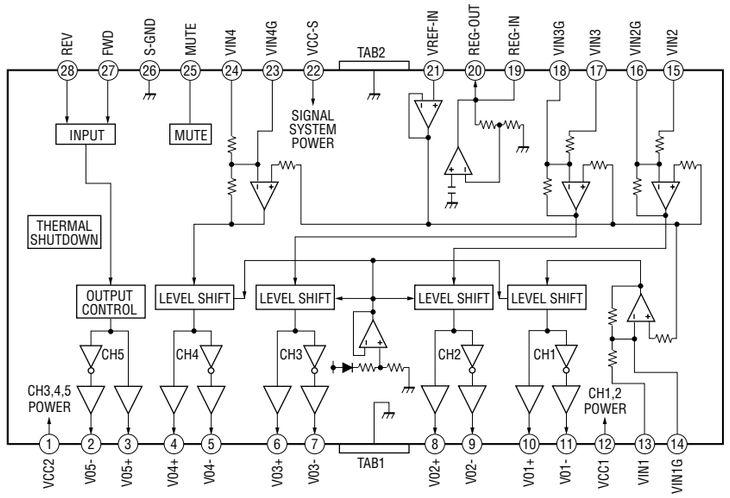
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : FM
  ＊ : Impossible to measure

3-13. IC BLOCK DIAGRAMS

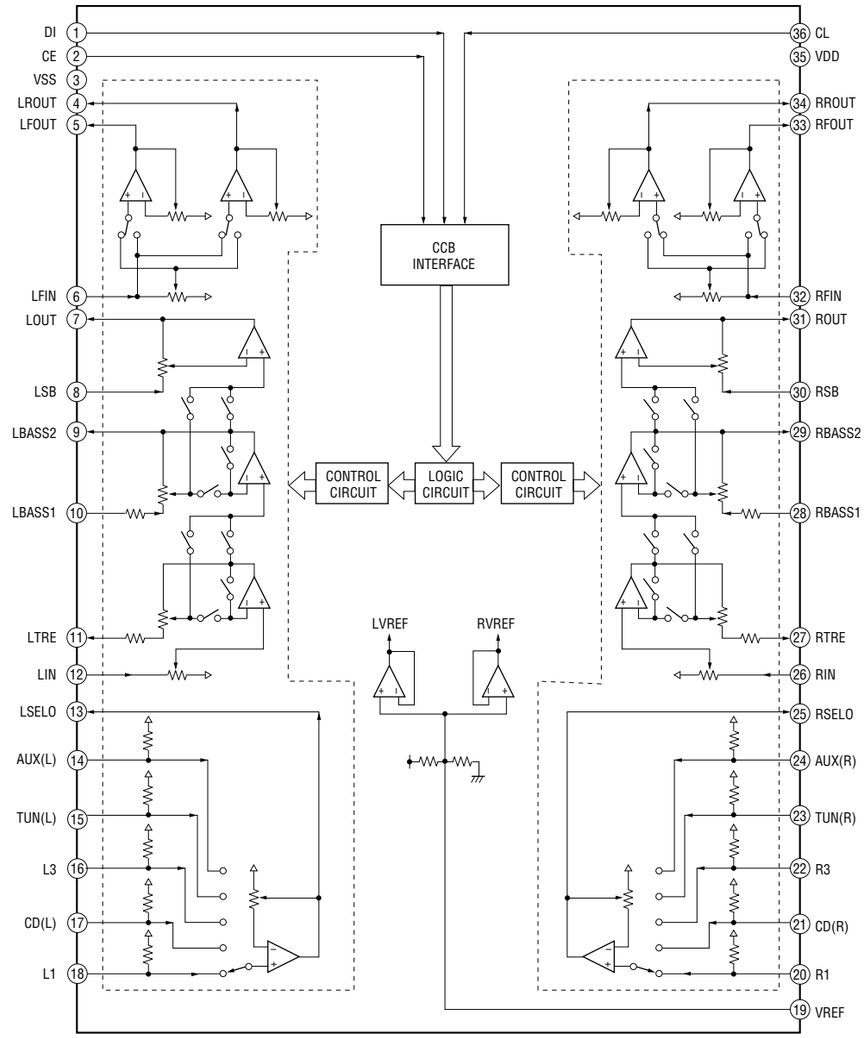
IC201 LA9241M (SERVO Board)


VCC1 LDS LDD BHI PH1 LF2 VR REFI VCC2 FSS DRF CE DAT CL CLK DEF
64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49
APC
RF DET
REF
VCA
I/V
BAL
VCA
∞ COM INTERFACE
LSC
RF AMP
TE
T.SERVO & T. LOGIC
F.SERVO & F.LOGIC
SPINDLE SERVO
SLED SERVO
FIN2 FIN1 E F TB TE- TE TESI SCI TH TA TD- TD JP TO FD
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
NC TBC FSC DGND SLI SLC RFS- RFSM CV+ CV- SLOF HFL TES TOFF TGL JP+
48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
FD- FA FA- FE FE- AGND NC SP SPG SP- SPD SELO SLD SL- SL+ JP-
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

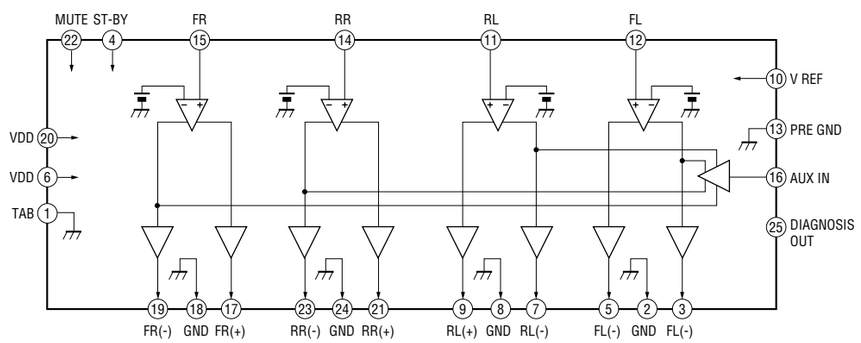
IC203 LA6557H-TE-L (SERVO Board)


REV FWD S-GND MUTE VIN4 VIN4G VCC-S TAB2 VREF-IN REG-OUT REG-IN VIN3G VIN3 VIN2G VIN2
28 27 26 25 24 23 22 21 20 19 18 17 16 15
INPUT
MUTE
SIGNAL SYSTEM POWER
THERMAL SHUTDOWN
OUTPUT CONTROL
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
CH5
CH4
CH3
CH2
CH1
CH3,4,5 POWER
CH1,2 POWER
TAB1
VCC2 VO5- VO5+ VO4+ VO4- VO3+ VO3- VO2+ VO2- VO1+ VO1- VCC1 VIN1 VIN1G
1 2 3 4 5 6 7 8 9 10 11 12 13 14

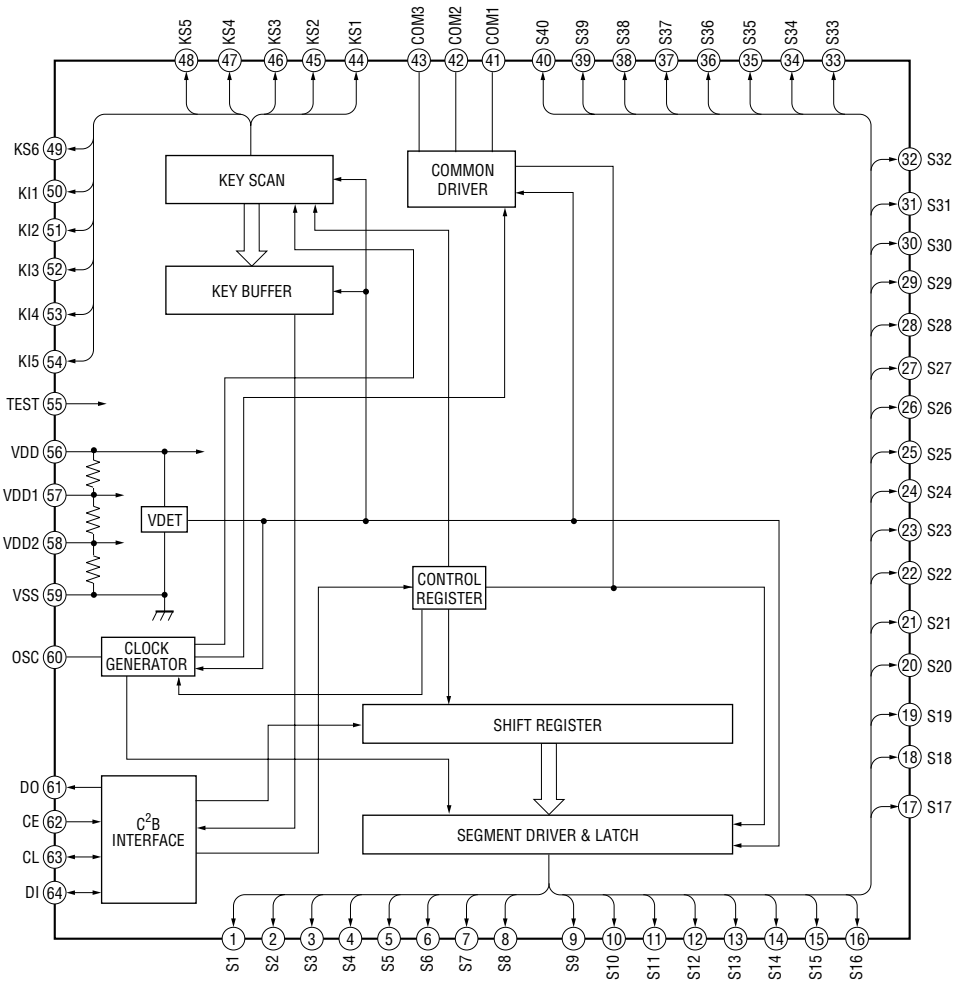
IC401 LC75421M-TLM-E (MAIN Board)


DI CE VSS LROUT LFOUT LFIN LOUT LSB LBASS2 LBASS1 LTRE LIN LSELO AUX(L) TUN(L) L3 CD(L) L1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
CL VDD RROUT RFOUT RFIN ROUT RSB RBASS2 RBASS1 RTRE RIN RSELO AUX(R) TUN(R) R3 CD(R) R1 VREF
36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19
CCB INTERFACE
CONTROL CIRCUIT
LOGIC CIRCUIT
CONTROL CIRCUIT
LVREF
RVREF

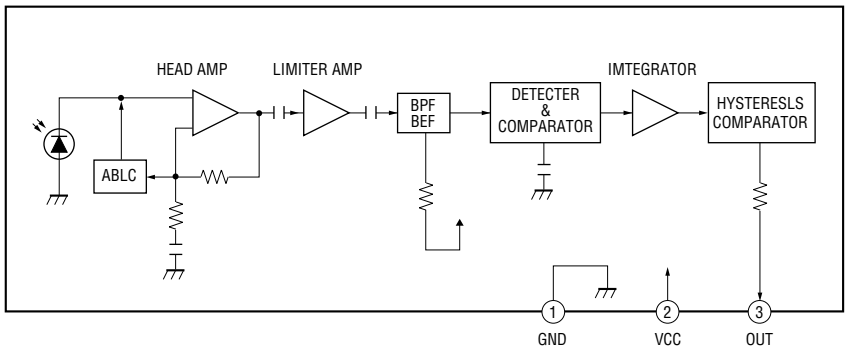
IC501 TA8272H (MAIN Board)


MUTE ST-BY FR RR RL FL
22 4 15 14 11 12
V REF PRE GND AUX IN DIAGNOSIS OUT
10 13 16 25
VDD VDD TAB
20 6 1
FR(-) GND FR(+) RR(-) GND RR(+) RL(+) GND RL(-) FL(-) GND FL(-)
19 18 17 23 24 21 9 8 7 5 2 3

IC601 LC75853NW (KEY Board)



IC681 SBX1971-52P (KEY Board)



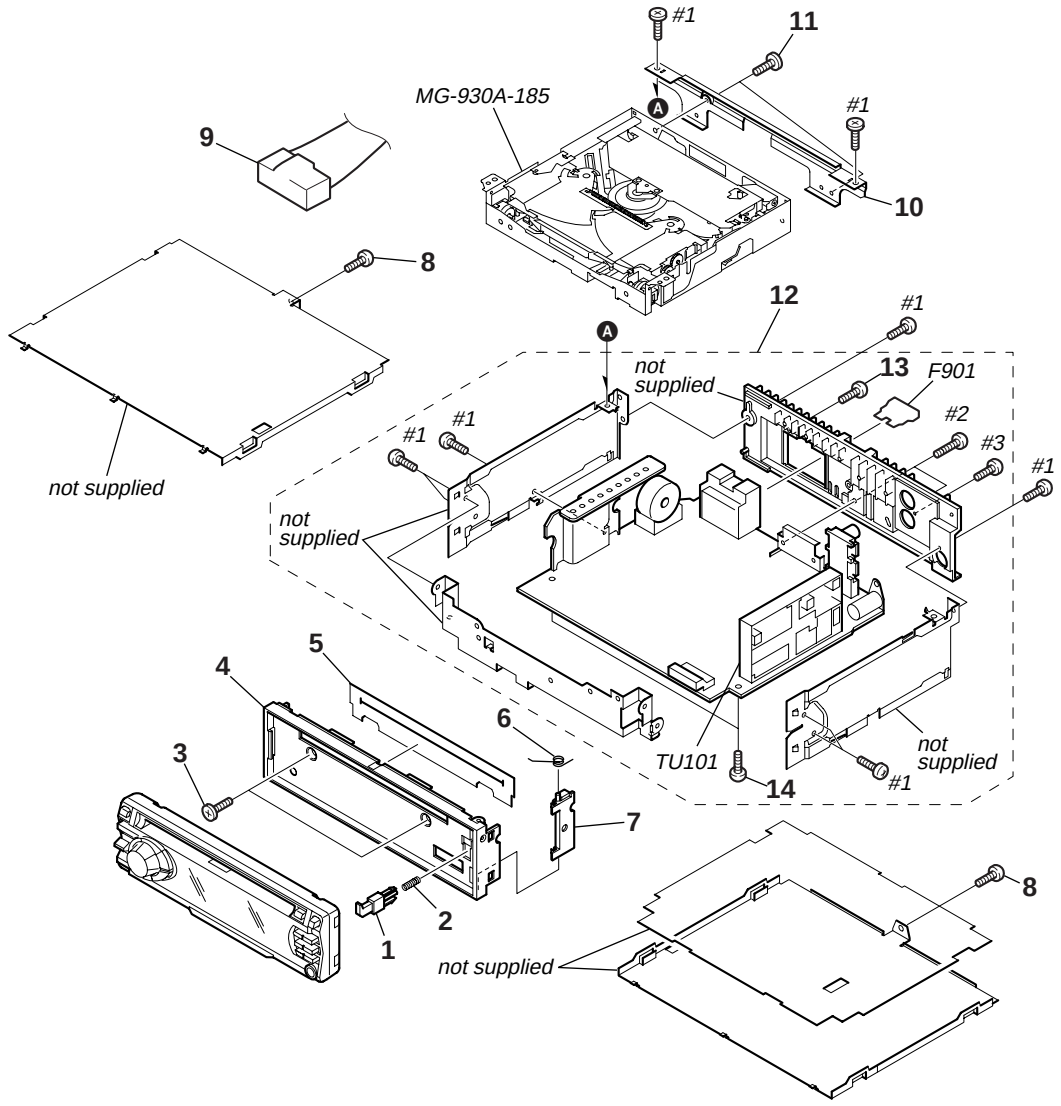
SECTION 4
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  Parts Color Cabinet's Color
- Accessories are given in the last of this parts list.
- Abbreviation
  CND: Canadian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

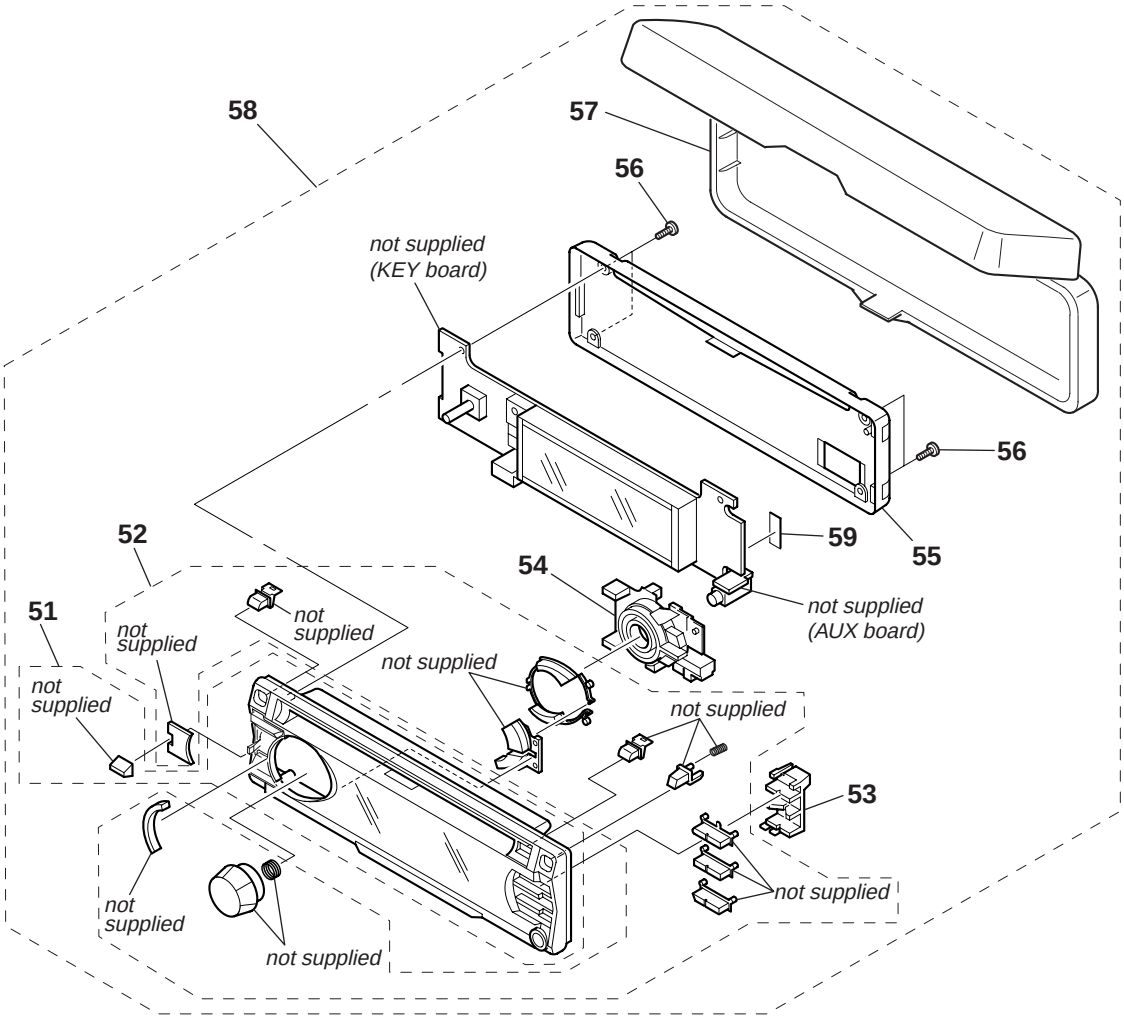
4-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	3-249-414-01	LEVER (DFP POP)	
2	3-251-492-01	SPRING (COIL/POP UP)	
3	3-250-895-01	SCREW +B 2.6X6	
4	3-251-066-01	PANEL, SUB	
5	3-250-908-01	SHEET (DOOR CD)	
6	3-251-089-01	SPRING, LOCK	
7	3-250-286-01	LEVER, LOCK	
8	3-250-551-01	SCREW (+PTP 2.6X4)	
9	1-776-207-41	CORD (WITH CONNECTOR) (POWER) (US,CND)	
9	1-776-527-82	CORD (WITH CONNECTOR) (ISO) (POWER) (AEP,UK)	
10	3-249-422-01	HOLDER (CD MECHA)	

Ref. No.	Part No.	Description	Remark
11	3-250-888-01	SCREW +P (2.6X4)	
12	A-3274-731-A	MAIN BOARD, COMPLETE (X237:US,CND)	
12	A-3274-758-A	MAIN BOARD, COMPLETE (AEP,UK)	
12	A-3274-759-A	MAIN BOARD, COMPLETE (X437)	
13	3-251-495-01	SCREW (2.6X8)	
14	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU101	1-693-609-11	TUNER UNIT (US,CND)	
TU101	1-693-610-11	TUNER UNIT (AEP,UK)	
#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#2	7-682-150-01	SCREW +P 3X12	
#3	7-685-793-09	SCREW +PTT 2.6X8 (S)	

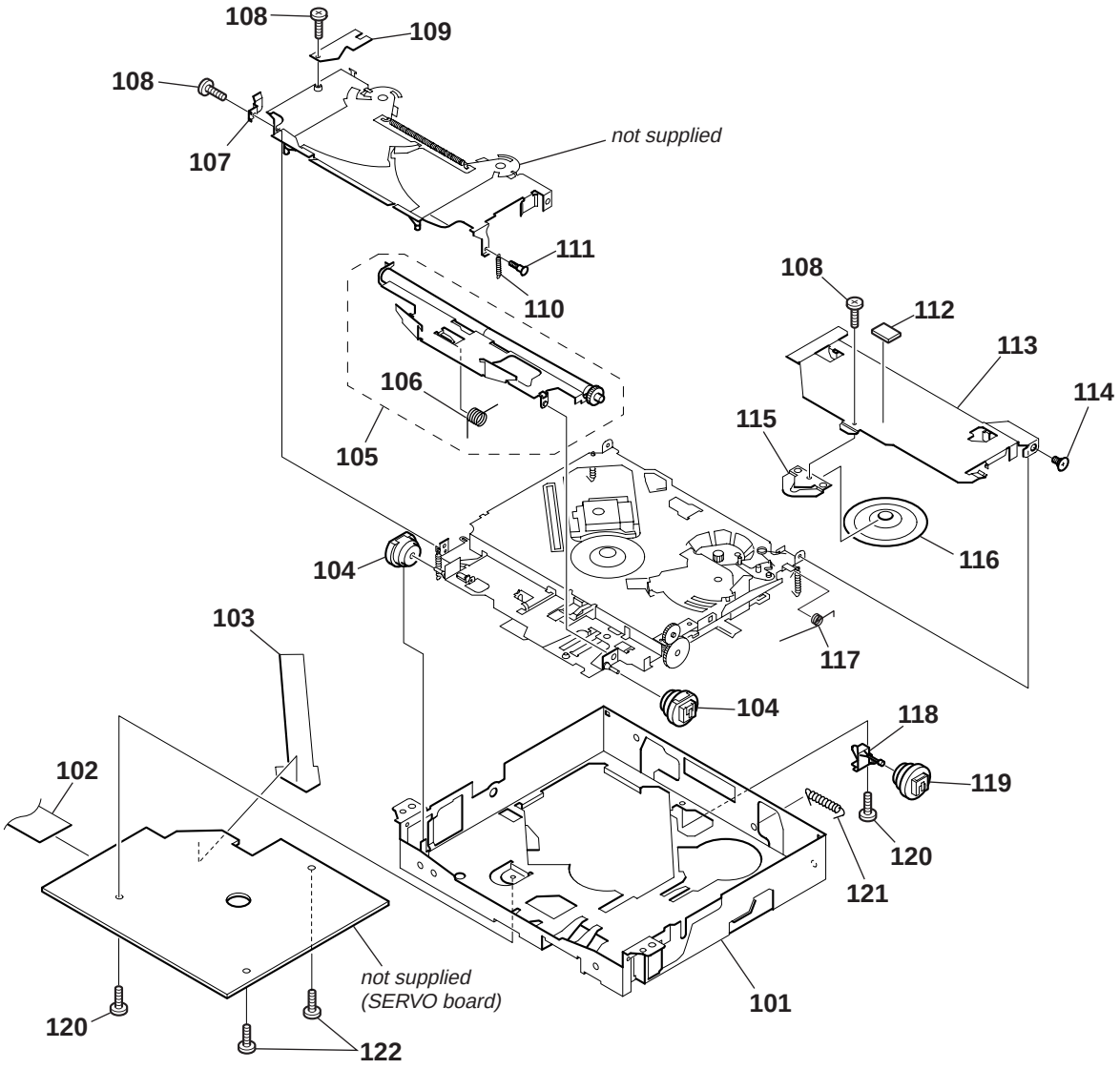
4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-3383-548-1	PANEL (SVX) ASSY (X237)	
51	X-3383-552-1	PANEL (SVX) ASSY (X437)	
52	X-3383-550-1	BUTTON ASSY	
53	3-249-410-01	LENS (PRESET)	
54	3-249-411-01	LENS (RTRY)	
55	3-249-389-01	CABINET (REAR)	

Ref. No.	Part No.	Description	Remark
56	3-250-543-01	SCREW (+PTP 2X8)	
57	X-3383-157-1	CASE ASSY (for FRONT PANEL)	
58	A-3337-437-A	PANEL ASSY, CASE (X237)	
58	A-3337-486-A	PANEL ASSY, CASE (X437)	
59	3-229-100-01	SHEET (SW), ADHESIVE	

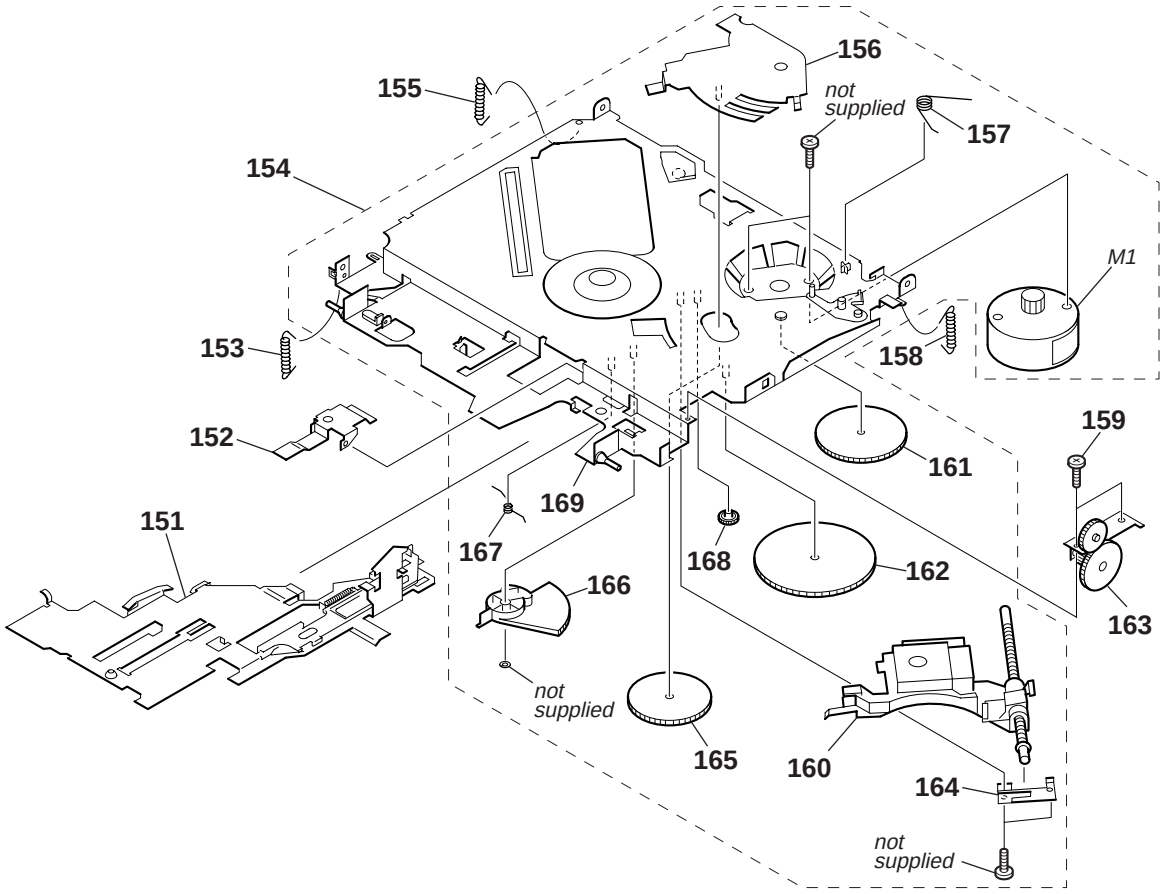
4-3. CD MECHANISM SECTION (1)
(MG-930A-185)



Ref. No.	Part No.	Description	Remark
101	X-3383-090-1	CHASSIS ASSY, HOLDER BNF	
102	1-687-801-11	FF-CABLE BOARD	
103	1-687-802-11	PIC2 FLEXIBLE BOARD	
104	3-250-985-01	OIL-DAMPER (BZG-3)	
105	A-3337-432-A	LEVER (CD ROLLER) SUB ASSY	
106	3-250-996-01	SPRING (ROLLER), TORSION	
107	3-251-001-01	SPRING (ROLLER), LEAF	
108	3-251-482-01	SCREW +P 1.4X2 NON-SLIT TYPE2	
109	A-3274-733-A	SUB BOARD, COMPLETE	
110	3-251-016-01	SPRING (FLOAT FR2), TENSION	
111	3-251-002-01	SCREW (CD UP HLDR), SPECIAL	

Ref. No.	Part No.	Description	Remark
112	3-250-990-01	SHEET (CLAMP)	
113	3-250-943-01	LEVER (CD HOLDER)	
114	3-250-987-01	SCREW (CD HLDR), SPECIAL	
115	3-251-005-01	SPRING (CLAMP), LEAF	
116	3-251-004-01	CLAMP (BZG-3)	
117	3-250-994-01	SPRING (CLAMP), TORSION	
118	3-250-952-01	HOLDER (FLOAT REAR)	
119	3-250-988-01	OIL-DAMPER, BZG-3 R	
120	3-251-481-01	SCREW +PTT 2X3 (S)	
121	3-251-050-01	SPRING (FLOAT RC), TENSION	
122	3-251-487-01	SCREW (M1.7X5)	

4-4. CD MECHANISM SECTION (2)
(MG-930A-185)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	A-3337-431-A	LEVER (DIRECTION) SUB ASSY	
152	3-250-936-01	LEVER (DIR DOWN)	
153	3-251-017-01	SPRING (FLOAT FL2), TENSION	
154	A-3337-427-A	CHASSIS ASSY (including M2)	
155	3-251-049-01	SPRING (FLOAT RL2), TENSION	
156	X-3383-087-1	LEVER ASSY, MODE CH	
157	3-250-997-01	SPRING (CD SENSOR), TORSION	
158	3-251-018-01	SPRING (FLOAT RR2), TENSION	
159	3-251-482-01	SCREW +P 1.4X2 NON-SLIT TYPE2	
⚠160	X-3383-509-1	PICK-UP SUB ASSY (including OPTICAL PICK-UP)	

Ref. No.	Part No.	Description	Remark
161	3-250-956-01	GEAR (CONNECT)	
162	3-250-963-01	GEAR (IDL DIR)	
163	X-3383-088-1	LEVER ASSY (GEAR HOLDER)	
164	3-251-006-01	SPRING (LEAD STOP2), LEAF	
165	3-250-957-01	GEAR (3 DIR)	
166	3-250-973-01	GEAR (CAM)	
167	3-250-995-01	SPRING (CAM), TORSION	
168	3-250-969-01	GEAR (WHL SLD)	
169	X-3383-506-1	CHASSIS ASSY	
M1	A-3337-430-A	MOTOR (SLED) SUB ASSY (SLED)	

AUX KEY

SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  CND: Canadian model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		AUX BOARD			
		**********			
		< JACK >			
J601	1-817-308-11	JACK (AUX)			
**********					
		KEY BOARD			
		**********			
		< CAPACITOR >			
C601	1-115-156-11	CERAMIC CHIP	1uF		10V
C604	1-164-733-11	CERAMIC CHIP	820PF	10%	50V
C605	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C681	1-115-156-11	CERAMIC CHIP	1uF		10V (X437)
C923	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< CONNECTOR >			
CON601	1-817-332-11	PLUG, CONNECTOR 15P			
		< DIODE >			
D601	8-719-067-40	DIODE STZ6.8N-T146			
D602	8-719-067-40	DIODE STZ6.8N-T146			
D641	8-719-075-89	LED BR1112H-730-TR (PWR)			
D642	8-719-075-89	LED BR1112H-730-TR (⏏)			
D643	6-500-560-01	LED SELU2E10C-P (LCD BACK LIGHT)			
D651	8-719-075-89	LED BR1112H-730-TR (1, 2, 3/INT, 4, 5/REP1, 6/SHUF)			
D652	8-719-075-89	LED BR1112H-730-TR (LO, TU, PS)			
D653	8-719-075-89	LED BR1112H-730-TR (SEL, ▶▶I/▶▶/+, –/I◀◀/◀◀, DSPL)			
D661	6-500-083-01	LED NSPW315BSRS (LCD BACK LIGHT)			
D671	6-500-526-01	LED SEC1E01C (1, 2, 3/INT, 4, 5/REP1, 6/SHUF)			
D672	6-500-526-01	LED SEC1E01C (LO, TU, PS)			
D673	6-500-526-01	LED SEC1E01C (SEL, ▶▶I/▶▶/+, –/I◀◀/◀◀, DSPL)			
D681	8-719-978-33	DIODE DTZ-TT11-6.8B (X437)			
D682	8-719-069-54	DIODE UDZS-TE-17-5.1B (X437)			
		< IC >			
IC601	6-703-682-01	IC LC75853NW			
IC681	8-742-130-00	IC SBX1971-52P (X437)			

Ref. No.	Part No.	Description			Remark
		< LIQUID CRYSTAL DISPLAY >			
LCD601	1-805-171-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q651	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
Q661	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
Q671	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
		< RESISTOR >			
R604	1-216-843-11	METAL CHIP	68K	5%	1/10W
R605	1-216-821-11	METAL CHIP	1K	5%	1/10W
R606	1-216-821-11	METAL CHIP	1K	5%	1/10W
R607	1-216-821-11	METAL CHIP	1K	5%	1/10W
R608	1-216-821-11	METAL CHIP	1K	5%	1/10W
R609	1-216-821-11	METAL CHIP	1K	5%	1/10W
R610	1-216-833-11	METAL CHIP	10K	5%	1/10W
R621	1-216-845-11	METAL CHIP	100K	5%	1/10W
R622	1-216-845-11	METAL CHIP	100K	5%	1/10W
R641	1-216-039-00	METAL CHIP	390	5%	1/10W
R643	1-216-043-11	RES-CHIP	560	5%	1/10W
R651	1-216-043-11	RES-CHIP	560	5%	1/10W
R652	1-216-043-11	RES-CHIP	560	5%	1/10W
R653	1-216-043-11	RES-CHIP	560	5%	1/10W
R654	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R661	1-216-186-00	RES-CHIP	330	5%	1/8W
R662	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R663	1-216-049-11	RES-CHIP	1K	5%	1/10W
R671	1-216-039-00	METAL CHIP	390	5%	1/10W
R672	1-216-039-00	METAL CHIP	390	5%	1/10W
R673	1-216-039-00	METAL CHIP	390	5%	1/10W
R674	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R681	1-216-820-11	METAL CHIP	820	5%	1/10W (X437)
R682	1-216-821-11	METAL CHIP	1K	5%	1/10W (X437)
		< SWITCH >			
S601	1-786-176-11	SWITCH, SLIDE (▶▶I/▶▶/+, –/I◀◀/◀◀)			
S602	1-572-596-21	SWITCH, KEYBOARD (PWR/ATT)			
S605	1-762-365-21	SWITCH, TACTILE (PS)			
S606	1-762-365-21	SWITCH, TACTILE (DSPL)			
S608	1-762-365-21	SWITCH, TACTILE (SEL)			
S610	1-762-365-21	SWITCH, TACTILE (LO)			
S611	1-572-596-21	SWITCH, KEYBOARD (⏏)			

Ref. No.	Part No.	Description			Remark
S612	1-762-365-21	SWITCH, TACTILE (TU)			
S613	1-572-596-21	SWITCH, KEYBOARD (1)			
S614	1-572-596-21	SWITCH, KEYBOARD (2)			
S615	1-572-596-21	SWITCH, KEYBOARD (3/INT)			
S616	1-572-596-21	SWITCH, KEYBOARD (4)			
S617	1-762-526-11	SWITCH (5/REP1)			
S618	1-572-596-21	SWITCH, KEYBOARD (6/SHUF)			
S621	1-477-774-11	ENCODER, ROTARY (PUSH-SOURCE/BTM –)			
**********					
	A-3274-731-A	MAIN BOARD, COMPLETE (X237:US,CND)			
	A-3274-758-A	MAIN BOARD, COMPLETE (AEP,UK)			
	A-3274-759-A	MAIN BOARD, COMPLETE (X437)			
		**********			
	3-251-495-01	SCREW (2.6X8)			
	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT			
	7-682-150-01	SCREW +P 3X12			
	7-685-792-09	SCREW +PTT 2.6X6 (S)			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
		< CAPACITOR >			
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-126-961-11	ELECT	2.2uF	20%	50V
C106	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C107	1-126-964-11	ELECT	10uF	20%	50V
C108	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C109	1-126-964-11	ELECT	10uF	20%	50V
C112	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C113	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C115	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C116	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C131	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (US,CND)
C131	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V (AEP,UK)
C132	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (US,CND)
C132	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V (AEP,UK)
C133	1-115-156-11	CERAMIC CHIP	1uF		10V
C134	1-115-156-11	CERAMIC CHIP	1uF		10V
C140	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C174	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C176	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C401	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C402	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C403	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C404	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C405	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C406	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C407	1-104-509-11	CERAMIC CHIP	0.018uF	10%	16V
C408	1-104-509-11	CERAMIC CHIP	0.018uF	10%	16V
C409	1-131-664-11	CERAMIC CHIP	0.15uF	10%	10V
C410	1-131-664-11	CERAMIC CHIP	0.15uF	10%	10V
C411	1-131-664-11	CERAMIC CHIP	0.15uF	10%	10V
C412	1-131-664-11	CERAMIC CHIP	0.15uF	10%	10V
C413	1-115-156-11	CERAMIC CHIP	1uF		10V
C414	1-115-156-11	CERAMIC CHIP	1uF		10V
C415	1-124-234-00	ELECT	22uF	20%	16V
C416	1-124-584-00	ELECT	100uF	20%	10V
C417	1-126-160-11	ELECT	1uF	20%	50V
C418	1-126-160-11	ELECT	1uF	20%	50V
C419	1-126-160-11	ELECT	1uF	20%	50V
C420	1-126-160-11	ELECT	1uF	20%	50V
C431	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C432	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C433	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C441	1-126-962-11	ELECT	3.3uF	20%	50V
C442	1-124-589-11	ELECT	47uF	20%	16V
C451	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C452	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C453	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C454	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C501	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C502	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C503	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C504	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C505	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C506	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C507	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C508	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C509	1-124-233-11	ELECT	10uF	20%	16V
C511	1-135-473-21	ELECT	3300uF	20%	16V
C512	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C513	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C515	1-124-259-11	ELECT	4.7uF	20%	35V
C518	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C531	1-124-259-11	ELECT	4.7uF	20%	35V
C591	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C701	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C704	1-115-156-11	CERAMIC CHIP	1uF		10V
C705	1-115-156-11	CERAMIC CHIP	1uF		10V
C706	1-115-156-11	CERAMIC CHIP	1uF		10V
C711	1-115-156-11	CERAMIC CHIP	1uF		10V
C712	1-115-156-11	CERAMIC CHIP	1uF		10V
C731	1-115-156-11	CERAMIC CHIP	1uF		10V
C732	1-115-156-11	CERAMIC CHIP	1uF		10V
C735	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C736	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C801	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C804	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C811	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C812	1-124-233-11	ELECT	10uF	20%	16V
C813	1-124-233-11	ELECT	10uF	20%	16V
C814	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C821	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C822	1-126-947-11	ELECT	47uF	20%	16V
C823	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C831	1-126-947-11	ELECT	47uF	20%	16V
C832	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C833	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C901	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C902	1-164-160-11	CERAMIC CHIP	20PF	5%	50V
C903	1-124-584-00	ELECT	100uF	20%	10V
C904	1-125-701-11	DOUBLE LAYERS	0.047F		5.5V
C906	1-164-156-11	CERAMIC CHIP	0.1uF		25V

MAIN

Ref. No.	Part No.	Description			Remark
C907	1-124-259-11	ELECT	4.7uF	20%	35V
C911	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C912	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C913	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C920	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C921	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C922	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C941	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C942	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNP801	1-774-701-21	PIN, CONNECTOR 16P			
CON701	1-573-810-11	HOUSING, CONNECTOR 20P			
CON702	1-817-333-11	SOCKET, CONNECTOR 15P			
		< DIODE >			
D101	8-719-062-51	DIODE 1PS226-115			
D441	8-719-066-11	DIODE 1PS184-115			
D451	8-719-062-51	DIODE 1PS226-115			
D501	6-500-522-01	DIODE 10EDB40-TA1B2			
D502	6-500-522-01	DIODE 10EDB40-TA1B2			
D503	6-500-522-01	DIODE 10EDB40-TA1B2			
D504	6-500-522-01	DIODE 10EDB40-TA1B2			
D505	6-500-522-01	DIODE 10EDB40-TA1B2			
D506	6-500-522-01	DIODE 10EDB40-TA1B2			
D507	6-500-522-01	DIODE 10EDB40-TA1B2			
D508	6-500-522-01	DIODE 10EDB40-TA1B2			
D509	8-719-066-11	DIODE 1PS184-115			
D531	8-719-109-97	DIODE RD6.8ES-B2			
D701	8-719-109-93	DIODE RD6.2ES-B2			
D702	8-719-109-93	DIODE RD6.2ES-B2			
D703	8-719-109-93	DIODE RD6.2ES-B2			
D704	8-719-109-93	DIODE RD6.2ES-B2			
D705	8-719-109-93	DIODE RD6.2ES-B2 (X437)			
D706	8-719-109-93	DIODE RD6.2ES-B2			
D707	8-719-109-93	DIODE RD6.2ES-B2			
D708	8-719-109-93	DIODE RD6.2ES-B2			
D801	6-500-522-01	DIODE 10EDB40-TA1B2			
D802	6-500-522-01	DIODE 10EDB40-TA1B2			
D813	8-719-109-93	DIODE RD6.2ES-B2			
D821	8-719-110-17	DIODE RD10ES-B2			
D831	8-719-110-08	DIODE RD8.2ES-B2			
D881	8-719-049-38	DIODE 1N5404TU			
D902	8-719-066-11	DIODE 1PS184-115			
D903	8-719-991-33	DIODE 1SS133T-77			
D904	8-719-109-85	DIODE RD5.1ES-B2 (AEP,UK)			
D905	8-719-914-44	DIODE DAP202K			
D906	8-719-066-11	DIODE 1PS184-115			
D912	8-719-991-33	DIODE 1SS133T-77 (US,CND)			
D913	8-719-991-33	DIODE 1SS133T-77 (AEP,UK)			
D914	8-719-991-33	DIODE 1SS133T-77 (US,CND)			
D915	8-719-991-33	DIODE 1SS133T-77			
D916	8-719-991-33	DIODE 1SS133T-77 (X437)			
D943	8-719-066-11	DIODE 1PS184-115			
		< FUSE >			
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC401	8-759-827-11	IC LC75421M-TLM-E			
IC501	8-759-827-12	IC TA8272H			
IC901	6-802-742-01	IC LC72358N-9B50			
IC941	6-701-405-01	IC PST3443UL			
		< JACK >			
J101	1-817-334-11	JACK (ANTENNA)			
J401	1-774-698-11	JACK, PIN 2P (AUDIO OUT REAR)			
		< JUMPER RESISTOR >			
JR1	1-216-864-11	METAL CHIP	0	5%	1/10W
JR2	1-216-864-11	METAL CHIP	0	5%	1/10W
JR3	1-216-864-11	METAL CHIP	0	5%	1/10W
JR4	1-216-864-11	METAL CHIP	0	5%	1/10W
JR5	1-216-864-11	METAL CHIP	0	5%	1/10W
JR6	1-216-864-11	METAL CHIP	0	5%	1/10W
JR7	1-216-864-11	METAL CHIP	0	5%	1/10W
JR8	1-216-864-11	METAL CHIP	0	5%	1/10W
JR9	1-216-864-11	METAL CHIP	0	5%	1/10W
JR11	1-216-296-11	SHORT CHIP	0		
JR12	1-216-296-11	SHORT CHIP	0		
JR14	1-216-296-11	SHORT CHIP	0		
		< COIL >			
L101	1-410-324-11	INDUCTOR	4.7uH		
L102	1-424-759-11	COIL (AM ANT)			
L401	1-410-324-11	INDUCTOR	4.7uH		
L731	1-410-509-11	INDUCTOR	10uH		
L801	1-419-476-41	COIL, CHOKE	250uH		
L901	1-410-517-11	INDUCTOR	47uH		
		< TRANSISTOR >			
Q101	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
Q102	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
Q105	8-729-026-48	TRANSISTOR 2SA1037AK-T146-Q			
Q106	8-729-026-48	TRANSISTOR 2SA1037AK-T146-Q			
Q109	8-729-043-30	TRANSISTOR PDTC114TK-115			
Q401	8-729-043-30	TRANSISTOR PDTC114TK-115			
Q402	8-729-043-30	TRANSISTOR PDTC114TK-115			
Q403	8-729-043-30	TRANSISTOR PDTC114TK-115			
Q404	8-729-043-30	TRANSISTOR PDTC114TK-115			
Q441	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
Q442	8-729-027-24	TRANSISTOR DTA114TKA-T146			
Q451	8-729-422-33	TRANSISTOR 2SD601A-Q-TX			
Q591	8-729-904-63	TRANSISTOR DTB123YK			
Q592	8-729-027-24	TRANSISTOR DTA114TKA-T146			
Q801	8-729-209-60	TRANSISTOR 2SB1375			
Q802	8-729-043-30	TRANSISTOR PDTC114TK-115			
Q811	8-729-040-23	TRANSISTOR 2SD1862TV2QR			
Q821	8-729-209-15	TRANSISTOR 2SD2012			
Q831	8-729-209-15	TRANSISTOR 2SD2012			
Q832	8-729-026-48	TRANSISTOR 2SA1037AK-T146-Q			
Q833	8-729-900-53	TRANSISTOR DTC114EK			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-216-857-11	METAL CHIP	1M	5%	1/10W
R102	1-216-820-11	METAL CHIP	820	5%	1/10W
R103	1-216-821-11	METAL CHIP	1K	5%	1/10W
R104	1-216-821-11	METAL CHIP	1K	5%	1/10W
R105	1-216-833-11	METAL CHIP	10K	5%	1/10W
R106	1-216-837-11	METAL CHIP	22K	5%	1/10W
R110	1-216-833-11	METAL CHIP	10K	5%	1/10W
R111	1-216-833-11	METAL CHIP	10K	5%	1/10W
R112	1-216-803-11	METAL CHIP	33	5%	1/10W
R113	1-216-813-11	METAL CHIP	220	5%	1/10W
R114	1-216-797-11	METAL CHIP	10	5%	1/10W
R115	1-216-001-00	METAL CHIP	10	5%	1/10W
R116	1-249-437-11	CARBON	47K	5%	1/4W
R117	1-216-851-11	METAL CHIP	330K	5%	1/10W
R119	1-216-839-11	METAL CHIP	33K	5%	1/10W
R120	1-216-841-11	METAL CHIP	47K	5%	1/10W
R121	1-216-821-11	METAL CHIP	1K	5%	1/10W
R122	1-249-421-11	CARBON	2.2K	5%	1/4W
R123	1-249-421-11	CARBON	2.2K	5%	1/4W
R131	1-249-427-11	CARBON	6.8K	5%	1/4W (AEP,UK)
R131	1-249-436-11	CARBON	39K	5%	1/4W (US,CND)
R132	1-249-427-11	CARBON	6.8K	5%	1/4W (AEP,UK)
R132	1-249-436-11	CARBON	39K	5%	1/4W (US,CND)
R140	1-216-821-11	METAL CHIP	1K	5%	1/10W
R401	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R402	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R403	1-216-835-11	METAL CHIP	15K	5%	1/10W
R404	1-216-835-11	METAL CHIP	15K	5%	1/10W
R405	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R406	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R409	1-249-402-11	CARBON	56	5%	1/4W
R411	1-249-417-11	CARBON	1K	5%	1/4W
R412	1-249-417-11	CARBON	1K	5%	1/4W
R413	1-249-417-11	CARBON	1K	5%	1/4W
R414	1-249-417-11	CARBON	1K	5%	1/4W
R415	1-216-864-11	METAL CHIP	0	5%	1/10W
R416	1-216-864-11	METAL CHIP	0	5%	1/10W
R417	1-216-821-11	METAL CHIP	1K	5%	1/10W
R418	1-216-821-11	METAL CHIP	1K	5%	1/10W
R423	1-216-841-11	METAL CHIP	47K	5%	1/10W
R424	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R441	1-216-208-00	RES-CHIP	2.7K	5%	1/8W
R442	1-216-817-11	METAL CHIP	470	5%	1/10W
R443	1-216-833-11	METAL CHIP	10K	5%	1/10W
R444	1-216-833-11	METAL CHIP	10K	5%	1/10W
R451	1-216-845-11	METAL CHIP	100K	5%	1/10W
R452	1-216-845-11	METAL CHIP	100K	5%	1/10W
R453	1-216-857-11	METAL CHIP	1M	5%	1/10W
R454	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R456	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R457	1-216-833-11	METAL CHIP	10K	5%	1/10W
R458	1-216-857-11	METAL CHIP	1M	5%	1/10W
R501	1-216-835-11	METAL CHIP	15K	5%	1/10W
R502	1-216-835-11	METAL CHIP	15K	5%	1/10W
R503	1-216-835-11	METAL CHIP	15K	5%	1/10W
R504	1-216-835-11	METAL CHIP	15K	5%	1/10W
R505	1-216-835-11	METAL CHIP	15K	5%	1/10W
R506	1-216-835-11	METAL CHIP	15K	5%	1/10W
R507	1-216-835-11	METAL CHIP	15K	5%	1/10W
R508	1-216-835-11	METAL CHIP	15K	5%	1/10W
R509	1-216-833-11	METAL CHIP	10K	5%	1/10W
R510	1-216-833-11	METAL CHIP	10K	5%	1/10W
R511	1-216-833-11	METAL CHIP	10K	5%	1/10W
R531	1-216-857-11	METAL CHIP	1M	5%	1/10W
R701	1-216-821-11	METAL CHIP	1K	5%	1/10W
R702	1-216-821-11	METAL CHIP	1K	5%	1/10W (X437)
R703	1-216-821-11	METAL CHIP	1K	5%	1/10W
R704	1-216-821-11	METAL CHIP	1K	5%	1/10W
R705	1-216-821-11	METAL CHIP	1K	5%	1/10W
R706	1-216-821-11	METAL CHIP	1K	5%	1/10W
R707	1-216-821-11	METAL CHIP	1K	5%	1/10W
R708	1-216-821-11	METAL CHIP	1K	5%	1/10W
R709	1-249-393-11	CARBON	10	5%	1/4W
R710	1-216-821-11	METAL CHIP	1K	5%	1/10W
R711	1-216-821-11	METAL CHIP	1K	5%	1/10W
R712	1-216-821-11	METAL CHIP	1K	5%	1/10W
R713	1-249-417-11	CARBON	1K	5%	1/4W
R714	1-216-821-11	METAL CHIP	1K	5%	1/10W
R715	1-216-821-11	METAL CHIP	1K	5%	1/10W
R716	1-216-821-11	METAL CHIP	1K	5%	1/10W
R717	1-216-821-11	METAL CHIP	1K	5%	1/10W
R718	1-216-821-11	METAL CHIP	1K	5%	1/10W
R719	1-249-417-11	CARBON	1K	5%	1/4W
R720	1-216-821-11	METAL CHIP	1K	5%	1/10W
R731	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R732	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R733	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R734	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R801	1-216-833-11	METAL CHIP	10K	5%	1/10W
R802	1-249-421-11	CARBON	2.2K	5%	1/4W
R803	1-249-421-11	CARBON	2.2K	5%	1/4W
R812	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R813	1-216-174-00	RES-CHIP	100	5%	1/8W
R814	1-249-417-11	CARBON	1K	5%	1/4W
R821	1-216-039-00	METAL CHIP	390	5%	1/10W
R822	1-216-039-00	METAL CHIP	390	5%	1/10W
R831	1-216-192-00	METAL CHIP	560	5%	1/8W
R832	1-216-192-00	METAL CHIP	560	5%	1/8W
R833	1-216-192-00	METAL CHIP	560	5%	1/8W
R834	1-216-049-11	RES-CHIP	1K	5%	1/10W
R835	1-216-833-11	METAL CHIP	10K	5%	1/10W
R901	1-216-852-11	METAL CHIP	390K	5%	1/10W
R902	1-216-844-11	METAL CHIP	82K	5%	1/10W
R904	1-216-833-11	METAL CHIP	10K	5%	1/10W
R905	1-216-845-11	METAL CHIP	100K	5%	1/10W
R906	1-249-421-11	CARBON	2.2K	5%	1/4W (AEP,UK)
R907	1-216-845-11	METAL CHIP	100K	5%	1/10W
R908	1-216-837-11	METAL CHIP	22K	5%	1/10W
R909	1-249-441-11	CARBON	100K	5%	1/4W

MAIN **SERVO**

Ref. No.	Part No.	Description			Remark
R910	1-216-845-11	METAL CHIP	100K	5%	1/10W
R911	1-216-833-11	METAL CHIP	10K	5%	1/10W
R912	1-216-835-11	METAL CHIP	15K	5%	1/10W
R915	1-216-845-11	METAL CHIP	100K	5%	1/10W
R916	1-216-845-11	METAL CHIP	100K	5%	1/10W
R917	1-216-845-11	METAL CHIP	100K	5%	1/10W
R918	1-216-845-11	METAL CHIP	100K	5%	1/10W
R921	1-216-821-11	METAL CHIP	1K	5%	1/10W
R922	1-216-845-11	METAL CHIP	100K	5%	1/10W
R923	1-216-845-11	METAL CHIP	100K	5%	1/10W
R924	1-216-845-11	METAL CHIP	100K	5%	1/10W
R925	1-216-845-11	METAL CHIP	100K	5%	1/10W
R926	1-249-417-11	CARBON	1K	5%	1/4W
R927	1-216-821-11	METAL CHIP	1K	5%	1/10W
R928	1-216-821-11	METAL CHIP	1K	5%	1/10W
R929	1-216-821-11	METAL CHIP	1K	5%	1/10W
R930	1-216-845-11	METAL CHIP	100K	5%	1/10W
R933	1-216-821-11	METAL CHIP	1K	5%	1/10W
R934	1-216-821-11	METAL CHIP	1K	5%	1/10W
R935	1-216-821-11	METAL CHIP	1K	5%	1/10W
R936	1-216-821-11	METAL CHIP	1K	5%	1/10W
R940	1-216-228-00	METAL CHIP	18K	5%	1/8W
R941	1-216-845-11	METAL CHIP	100K	5%	1/10W
R942	1-216-842-11	METAL CHIP	56K	5%	1/10W
R943	1-216-845-11	METAL CHIP	100K	5%	1/10W
		< SWITCH >			
S901	1-692-431-21	SWITCH, TACTILE (RESET)			
		< THERMISTOR (POSITIVE) >			
THP804	1-809-148-11	THERMISTOR PTH8L07AR2R0M1B510			
		< TUNER >			
TU101	1-693-609-11	TUNER UNIT (US,CND)			
TU101	1-693-610-11	TUNER UNIT (AEP,UK)			
		< VIBRATOR >			
X901	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)			

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SERVO BOARD

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< CAPACITOR >

C201	1-124-589-11	ELECT	47uF	20%	16V
C202	1-124-589-11	ELECT	47uF	20%	16V
C203	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C204	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C205	1-117-863-11	CERAMIC CHIP	0.47uF	10%	16V
C206	1-124-252-00	ELECT	0.33uF	20%	50V
C207	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C208	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C209	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C210	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C211	1-124-465-00	ELECT	0.47uF	20%	50V
C212	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C213	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C214	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V

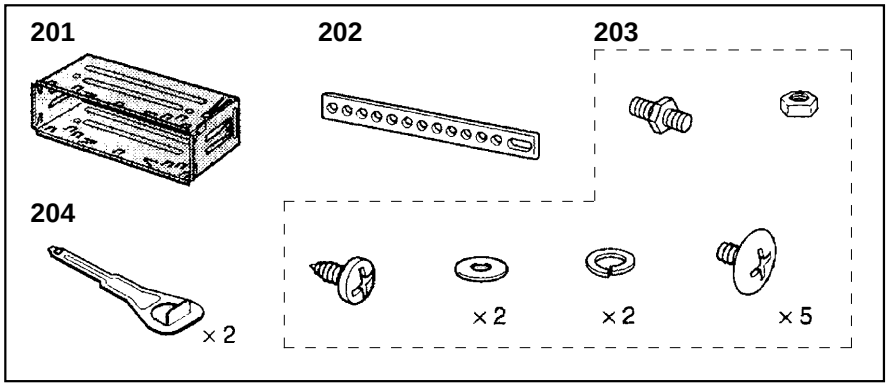
Ref. No.	Part No.	Description			Remark
C215	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C216	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C217	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C218	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C219	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C220	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C221	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C222	1-124-252-00	ELECT	0.33uF	20%	50V
C223	1-124-463-00	ELECT	0.1uF	20%	50V
C224	1-124-589-11	ELECT	47uF	20%	16V
C225	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C226	1-124-259-11	ELECT	4.7uF	20%	35V
C227	1-124-584-00	ELECT	100uF	20%	10V
C228	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C229	1-124-233-11	ELECT	10uF	20%	16V
C230	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C231	1-124-584-00	ELECT	100uF	20%	10V
C232	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C233	1-124-584-00	ELECT	100uF	20%	10V
C234	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C235	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C236	1-124-463-00	ELECT	0.1uF	20%	50V
C237	1-124-589-11	ELECT	47uF	20%	16V
C238	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C240	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C250	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C251	1-124-584-00	ELECT	100uF	20%	10V
C252	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C253	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C254	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C256	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C258	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V
C259	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C261	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C262	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C263	1-124-584-00	ELECT	100uF	20%	10V
C264	1-124-584-00	ELECT	100uF	20%	10V
C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C266	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C267	1-124-233-11	ELECT	10uF	20%	16V
C268	1-124-233-11	ELECT	10uF	20%	16V
C269	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C270	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C280	1-126-176-11	ELECT	220uF	20%	10V
C281	1-124-584-00	ELECT	100uF	20%	10V
C282	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
* CON201	1-580-802-21	SOCKET, CONNECTOR 20P			
		< IC >			
IC201	8-759-498-93	IC LA9241M			
IC202	6-700-355-01	IC LC78622NE			
IC203	6-703-681-01	IC LA6557H-TE-L			
		< TRANSISTOR >			
Q201	8-729-026-48	TRANSISTOR 2SA1037AK-T146-Q			

Ref. No.	Part No.	Description			Remark
Q202	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q203	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q204	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q205	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q206	8-729-422-33	TRANSISTOR	2SD601A-Q-TX		
Q207	8-729-039-82	TRANSISTOR	2SB1326-QR-TV2		
Q208	8-729-043-30	TRANSISTOR	PDTC114TK-115		
		< RESISTOR >			
R201	1-216-797-11	METAL CHIP	10	5%	1/10W
R202	1-216-833-11	METAL CHIP	10K	5%	1/10W
R203	1-216-836-11	METAL CHIP	18K	5%	1/10W
R204	1-216-837-11	METAL CHIP	22K	5%	1/10W
R205	1-216-837-11	METAL CHIP	22K	5%	1/10W
R206	1-216-836-11	METAL CHIP	18K	5%	1/10W
R209	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R210	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R211	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R212	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R213	1-216-833-11	METAL CHIP	10K	5%	1/10W
R214	1-216-833-11	METAL CHIP	10K	5%	1/10W
R215	1-216-837-11	METAL CHIP	22K	5%	1/10W
R216	1-216-837-11	METAL CHIP	22K	5%	1/10W
R217	1-216-845-11	METAL CHIP	100K	5%	1/10W
R218	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R219	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R220	1-216-843-11	METAL CHIP	68K	5%	1/10W
R221	1-216-834-11	METAL CHIP	12K	5%	1/10W
R222	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R223	1-216-849-11	METAL CHIP	220K	5%	1/10W
R224	1-216-835-11	METAL CHIP	15K	5%	1/10W
R225	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R226	1-216-842-11	METAL CHIP	56K	5%	1/10W
R227	1-216-820-11	METAL CHIP	820	5%	1/10W
R228	1-216-849-11	METAL CHIP	220K	5%	1/10W
R229	1-216-836-11	METAL CHIP	18K	5%	1/10W
R230	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R231	1-216-836-11	METAL CHIP	18K	5%	1/10W
R232	1-216-842-11	METAL CHIP	56K	5%	1/10W
R233	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R234	1-216-840-11	METAL CHIP	39K	5%	1/10W
R235	1-216-846-11	METAL CHIP	120K	5%	1/10W
R236	1-216-839-11	METAL CHIP	33K	5%	1/10W
R237	1-216-841-11	METAL CHIP	47K	5%	1/10W
R238	1-216-841-11	METAL CHIP	47K	5%	1/10W
R239	1-216-835-11	METAL CHIP	15K	5%	1/10W
R240	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R241	1-216-850-11	METAL CHIP	270K	5%	1/10W
R242	1-216-850-11	METAL CHIP	270K	5%	1/10W
R243	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R244	1-216-837-11	METAL CHIP	22K	5%	1/10W
R245	1-216-841-11	METAL CHIP	47K	5%	1/10W
R246	1-216-797-11	METAL CHIP	10	5%	1/10W
R247	1-218-446-11	METAL CHIP	1	5%	1/10W
R248	1-216-848-11	METAL CHIP	180K	5%	1/10W
R250	1-216-819-11	METAL CHIP	680	5%	1/10W
R251	1-216-839-11	METAL CHIP	33K	5%	1/10W
R252	1-216-822-11	METAL CHIP	1.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R253	1-216-839-11	METAL CHIP	33K	5%	1/10W
R254	1-216-864-11	METAL CHIP	0	5%	1/10W
R255	1-216-817-11	METAL CHIP	470	5%	1/10W
R256	1-216-841-11	METAL CHIP	47K	5%	1/10W
R257	1-216-833-11	METAL CHIP	10K	5%	1/10W
R258	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R259	1-216-808-11	METAL CHIP	82	5%	1/10W
R260	1-216-805-11	METAL CHIP	47	5%	1/10W
R261	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R262	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R263	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R264	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R265	1-216-821-11	METAL CHIP	1K	5%	1/10W
R266	1-218-446-11	METAL CHIP	1	5%	1/10W
R267	1-218-446-11	METAL CHIP	1	5%	1/10W
R268	1-216-808-11	METAL CHIP	82	5%	1/10W
R269	1-216-837-11	METAL CHIP	22K	5%	1/10W
R270	1-216-839-11	METAL CHIP	33K	5%	1/10W
R271	1-216-840-11	METAL CHIP	39K	5%	1/10W
R272	1-216-839-11	METAL CHIP	33K	5%	1/10W
R273	1-216-864-11	METAL CHIP	0	5%	1/10W
R274	1-216-839-11	METAL CHIP	33K	5%	1/10W
R275	1-216-864-11	METAL CHIP	0	5%	1/10W
R276	1-216-864-11	METAL CHIP	0	5%	1/10W
R277	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R278	1-216-818-11	METAL CHIP	560	5%	1/10W
R281	1-216-859-11	METAL CHIP	1.5M	5%	1/10W
R282	1-216-859-11	METAL CHIP	1.5M	5%	1/10W
R284	1-216-837-11	METAL CHIP	22K	5%	1/10W
R285	1-216-834-11	METAL CHIP	12K	5%	1/10W
R286	1-216-847-11	METAL CHIP	150K	5%	1/10W
R288	1-216-845-11	METAL CHIP	100K	5%	1/10W
R291	1-216-809-11	METAL CHIP	100	5%	1/10W
R295	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R296	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R297	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< VIBRATOR >			
X201	1-795-563-21	VIBRATOR, CERAMIC (16.9344MHz)			
**********					
	A-3274-733-A	SUB BOARD, COMPLETE (including S1,S2)			
**********					
		MISCELLANEOUS			
		**********			
9	1-776-207-41	CORD (WITH CONNECTOR) (POWER) (US,CND)			
9	1-776-527-82	CORD (WITH CONNECTOR) (ISO) (POWER)			(AEP,UK)
102	1-687-801-11	FF-CABLE BOARD			
103	1-687-802-11	PIC2 FLEXIBLE BOARD			
154	A-3337-427-A	CHASSIS ASSY (including M2)			
⚠160	X-3383-509-1	PICK-UP SUB ASSY			(including OPTICAL PICK-UP)
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A			
M1	A-3337-430-A	MOTOR (SLED) SUB ASSY (SLED)			
**********					

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		**********	
	1-477-833-11	REMOTE COMMANDER (RM-Z303) (X437)	
	3-250-255-01	COLLAR	
	3-251-485-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH, FRENCH) (X237:US,CND)	
	3-251-485-21	MANUAL, INSTRUCTION (ENGLISH,SPANISH, FRENCH,GERMAN,ITALIAN,DUTCH,POLISH, HUNGARIAN,CZECH,RUSSIAN) (AEP,UK)	
	3-251-485-31	MANUAL, INSTRUCTION (ENGLISH,SPANISH, FRENCH) (X437)	
	3-251-494-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,FRENCH) (US,CND)	
	3-252-883-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,FRENCH,GERMAN,ITALIAN,DUTCH, POLISH,HUNGARIAN,CZECH,RUSSIAN) (AEP,UK)	
	3-255-074-01	LID, BATTERY CASE (for RM-Z303) (X437)	
	7-621-772-10	SCREW +P 2X4 (US,CND)	
	X-3383-157-1	CASE ASSY (for FRONT PANEL)	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
201	3-250-171-01	FRAME, FITTING	
202	3-251-083-01	HOLDER, REAR	
203	X-3383-233-1	SCREW ASSY (A)	
204	3-251-080-01	KEY, FRAME	



MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2003. 01	New